R E P O R T  R E S U M E S

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A PERCEPTUAL TRAINING PROGRAM FOR CHILDREN WITH LEARNING DISORDERS.

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DESCRIPTORS- *EXCEPTIONAL CHILD RESEARCH, *LEARNING DISABILITIES, *TEACHING METHODS, PROGRAM EVALUATION, TESTS, SPECIAL CLASSES, PERCEPTION, PERCEPTUALLY HANDICAPPED, MINIMALLY BRAIN INJURED,

AN EXPERIMENTAL TRAINING PROGRAM STUDIED THE EFFECTIVENESS OF NEW METHODS OF IDENTIFYING AND TEACHING PERCEPTUALLY HANDICAPPED CHILDREN WITH LEARNING DISORDERS. SUBJECTS WERE SELECTED BY THE FOLLOWING CRITERIA--SPECIFIC LEARNING DEFICITS, PERCEPTUAL DEFICITS, GENERAL COORDINATION DEFICITS, HYPERKINESIS, IMPULSIVITY, EMOTIONAL LIBILITY, SHORT ATTENTION SPAN AND/OR DISTRACTIBILITY, AND EQUIVOCAL NEUROLOGICAL SIGNS. SUBJECTS SELECTED WERE PLACED EITHER IN CLASS TYPE "T" (TRACTIBLE OR TRANQUIL) OR IN TYPE "H" (HYPERKINETIC). EXPERIMENTAL CONTROLS EXERCISED INCLUDED EVALUATION OF ALL CHILDREN BEFORE ENROLLMENT IN SPECIAL CLASSES, UNBIASED SELECTION, AND ASSIGNMENT OF SOME OF THE SUITABLE CHILDREN TO REGULAR CLASSES. A 3-YEAR EVALUATION WAS MADE. CURRICULUM FOCUSED ON BASIC SCHOOL SKILLS, AND TEACHERS TOOK ACCOUNT OF THE CHARACTERISTIC VARIABILITY OF PERCEPTUALLY HANDICAPPED CHILDREN. CLASSROOMS WERE ADAPTED TO ELIMINATE DISTRACTION; AND CLASSES WERE KEPT SMALL. MOTOR ACTIVITY AND REPETITION WERE STRUCTURED INTO CLASSROOM ACTIVITIES. SPECIAL TRAINING WAS REQUIRED OF THE TEACHERS. THE FIRST YEAR THE 14 EXPERIMENTAL SUBJECTS IMPROVED OVER THE 10 CONTROLS WITH AN AVERAGE GRADE LEVEL DIFFERENCE OF .13 IN READING, 1.01 IN SPELLING, AND .92 IN ARITHMETIC. THE SECOND YEAR THE 31 SUBJECTS IMPROVED AN AVERAGE OF 1.3 IN READING, .9 IN SPELLING, AND .9 IN ARITHMETIC. BEHAVIORAL CHANGES WERE ALSO NOTED. THE BENDER-GESTALT TESTS WERE ADMINISTERED TO MEASURE PERCEPTUAL GROWTH. DURING THE THIRD YEAR, WITH 94 SUBJECTS IN 11 CLASSES, AVERAGE IMPROVEMENT WAS .8 IN READING, .6 IN SPELLING, AND .6 IN ARITHMETIC. TABLES OF ACHIEVEMENT SCORES ARE GIVEN. THE SOURCES OF THE TEACHING METHODS USED ARE IDENTIFIED AS ALFRED STRAUSS AND LAURA LEHTINEN, AND THE FROSTIG PROGRAM FOR DEVELOPMENT OF VISUAL PERCEPTION AND THE HAY-WINGO METHOD OF TEACHING READING AND LANGUAGE SKILL ARE RECOMMENDED. DRAWINGS EVIDENCING VISUAL AND VISUAL MOTOR PERCEPTUAL GROWTH OF SEVERAL CHILDREN INVOLVED IN THE PROGRAM ARE INCLUDED AS EXHIBITS. A BIBLIOGRAPHY LISTS FOUR ITEMS. (JD)

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# A Perceptual Training Program For Children With Learning Disorders

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# Foreword

The material contained in this booklet represents an overview of the scope of the perceptual training program for children with learning disorders in the Memphis City School System.

It is designed to acquaint those interested in this type training with the work carried out by this particular section of the Special Education Division of the Department of Instruction.

Many individuals could be cited for their help in making this booklet possible, but a special word of appreciation is due the teachers in the perceptual training program for their invaluable assistance. The professional spirit in which this group of teachers operates is highly commendable, and their dedication to their duties is reflected in the following pages.

The success of this program is the story of their success.

## *The Beginning . . . . .*

**Perceptual training for children with learning disorders actually has its origin in the regular elementary classroom . . . for it is from the classroom that these children are identified and moved into special training facilities . . . . .**

# A Perceptual Training Program For Children With Learning Disorders

For many decades classroom teachers, principals, school or clinical psychologists, parents, and physicians have been perplexed and generally concerned about children who wore many varied but confused labels. Teachers many times diagnosed the children as mentally retarded, especially in upper elementary grades, and unfortunately many of these youngsters did find themselves placed in classes designed for the educable mentally retarded. Principals saw many of these children as "bad" boys or girls, hyperactive, mischievous, constant visitors to his office for misconduct in the classroom, in the cafeteria, or on the playground. The school or clinical psychologist saw these children with "dirty" Benders, uneven performance on the WISC with as much as thirty point spreads between performance and verbal language scores, "retarded" one or more years academically with perhaps some characteristics of a disturbed child; yet, many psychologists were unable to provide a label that would appropriately describe these children. This matter of diagnosis was particularly difficult to relate to parents and sometimes to teachers. Many parents of these children found their way to the physician who could find no apparent physical anomaly that could be restricting the child's learning. So went, or has gone, the unending cycle that engulfed the children with learning disabilities, perceptually handicapped, neurologically impaired (take your pick).

The experimental program described in this paper came after several years of study and research on the part of the author, and most important as a result of the advice and counsel of the following individuals: DRS. NELMS BOONE, JERRY BOONE, ROBERT JORDON, RAY MACKEY.

The purpose of this specific experimental program, briefly defined, was to study the effectiveness of the new methods of identifying and teaching this type of exceptional child. More specifically, in the area of education, to attempt to further determine or establish functional methods and/or procedures of classroom instruction that will best provide and meet the educational needs and abilities of these children.

## DESCRIPTION OF HANDICAPPED CONDITION

"Perceptually handicapped children" are children with minimal brain dysfunction who before, during, or after birth have sustained some type and degree of organic impairment resulting in a central nervous system deviation from "normal". As a result of such organic impairment, the children may show defects in perception, motor activity, thinking, language, inhibition of impulses, and "emotional" behavior, either separately or in combination. These disturbances can be demonstrated by means of special diagnostic procedures utilizing specific tests and techniques. These disturbances prevent or impede the normal learning processes in both academic and social endeavors. Such children are frequently mis-diagnosed as being "emotionally disturbed", and/or mentally retarded. Because of these specific intellectual deficits, special teaching methods are necessary to cope with the children's particular learning handicaps. The brain dysfunction may arise from genetic or other prenatal factors, perinatal brain insults, or illnesses and injuries sustained during the years critical for normal development and maturation of the central nervous system.

Neither regular classes nor any existing special classes in the Memphis School System, provided the school environment and special teaching methods required for the education of such a child. This proposal was to study the effectiveness of new methods for identifying and teaching such children.

## INCIDENCE

According to one investigator (Ford, 1944), the number of children having central nervous system impairment without

clinical symptoms may outnumber those who do have definite physical symptoms: Most studies reporting the number of children with central nervous system impairment indicate approximately six or seven per thousand births (Fourscore, 1958). A reasonable estimate of the number of children having the characteristics described in this proposal would be two to four per thousand births.

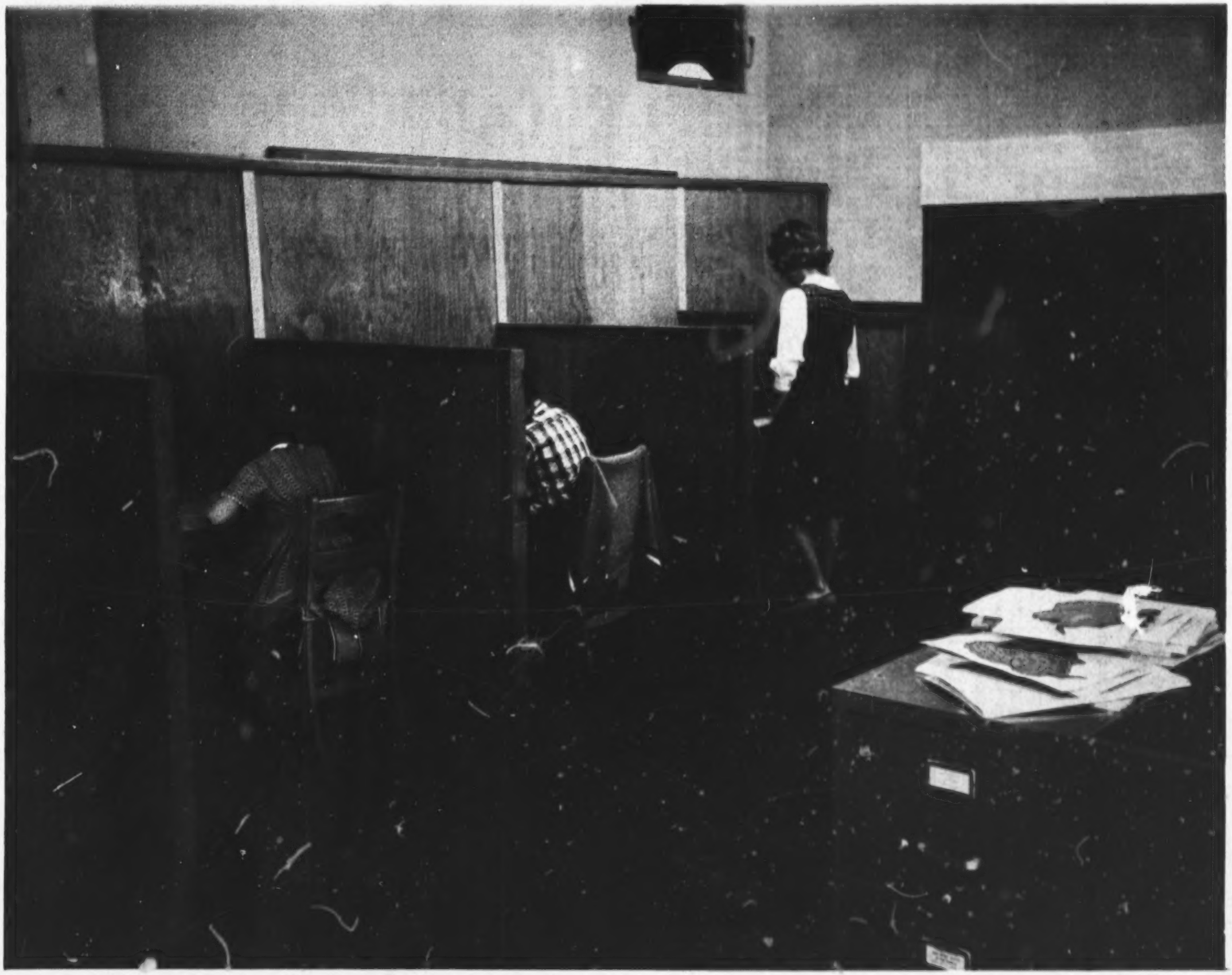
## CRITERIA FOR SELECTION OF PERCEPTUALLY HANDICAPPED CHILDREN

The children involved in this study would have at least average over-all intellectual ability with no defects of hearing or vision, and no asphasoid language problem. Some, but not necessarily all, of the following characteristics would be present.

1. **Specific learning deficits**: Child cannot read at grade or age level; over stimulation, mild excitement, or tension may bring out typical dyslexic errors; spelling poor; difficulty with arithmetic; difficulty with abstractions and whole-part relationships; difficulty in mastering tasks which are dependent on good visual motor coordination.
2. **Perceptual deficits**: Printing, writing and drawing poor; poor and erratic performance when copying geometric figures; often the child attempts to compensate for the latter by task perseverance and/or innumerable and meticulous tiny strokes of the pencil; usually has difficulty in reproducing geometric designs with blocks, due to defect in figure-ground and/or whole-part discrimination.
3. **General coordination deficits**: Child often described as awkward, ungainly, or clumsy; this may appear in either fine muscle performance or in over-all coordination, or both.
4. **Hyperkinesis**: Child appears to be in constant motion, flitting from one object or activity to another, or may merely be restless and fidgety; the child's "driveness" may be manifest also as voluble, uninhibited speech, or as disorganized thinking, even in the absence of outward hyperkinesis.
5. **Impulsivity**: The child cannot keep from touching and handling objects, particularly in a strange or over-stimulating environment; he may speak without checking himself and even say socially unacceptable things and by so doing appear brash; his impulsivity easily leads him into conflict with the demands as established by family, school and society. The child may commit striking anti-social acts.
6. **Emotional lability**: The child may be "highstrung", irritable, or aggressive; he may have quick changes from high temper to easy manageability and remorse; he may be panicked by what would appear to others as a minimally stressful situation; however, some of these children have good dispositions and are even-tempered even in the presence of a frustrating inability to read.
7. **Short attention span and/or distractibility**: Child unable to concentrate on one thing for very long; he especially loses interest when abstract material is being considered; even with this symptom, there are some children who show a tendency to become locked in some simple repetitious motor activity or preoccupation with one verbal topic. Some children show good attention span when their interest is aroused, but when not so engaged display marked distractibility to irrelevant stimuli.
8. **"Equivocal" neurological signs**: Among the most frequently seen (of such) signs are: transient strabismus; dysdiadokokinesis; poor coordination of fingers; mixed and confused laterality (the former refers to the use of hand, foot, or eye, and the latter to ability to distinguish right from left); speech defect (or history of slow speech development or irregularity); general awkwardness. Child may show definitely abnormal or borderline EEG patterns.

## IDENTIFICATION OF CHILDREN FOR CLASSES

Separation of perceptually handicapped children into two kinds of classes was executed. Some of these children presented more severe and more limiting be-



havior (though not necessarily more serious learning problems) than did others. To make the classes more homogeneous, and consequently easier to organize and to evaluate, the following groupings were proposed.

**Class type "T" (tractible or tranquil)**

This class would be for children possessing some or all of the criteria listed above **except** the characteristics of hyperkinesis, impulsivity and emotional lability.

**Class type "H" (hyperkinetic)**

This class would be for children possessing some or all of the criteria listed above **including** the characteristics of hyperkinesis, impulsivity, and emotional lability.

Preliminary identification of these perceptually handicapped children would be made by teachers, by school administrators and by professional workers who have seen the children clinically and are acquainted with their peculiar educational problems. Suitabilty for enrollment in the proposed experimental classes would be determined by (a) *parent's approval* of the child's participation, (b) history of scholastic difficulty such as described in "criteria", (c) medical examination (including complete neurological examination), and (d) extensive psychological appraisal.

## EXPERIMENTAL CONTROLS

To determine whether proposed special education classes in the Memphis School System are effective, careful experimental procedures must be observed. This would include evaluation of all children before enrollment in the special classes. Also it would include the unbiased selection and unbiased assignment of some of the suitable children to regular classes. The progress of the children in this control group would be compared with the progress of the children's counterparts who were assigned to the experimental special education classes. Adequate comparison of progress would require a minimum of three years participation in the experimental classes.

## CURRICULUM

The educational environment for the perceptually handicapped child is planned to counteract as much as possible the general organic disturbances of behavior and attention. The instruction plan should focus on the basic school skills of reading, writing, and arithmetic, since failure in these subjects will block further school progress.

The teacher's attitude toward children in general and to "difficult" children in particular, is the most important single factor in working with these children. A teacher who is patient, warm, imaginative and understanding will achieve greater success than the one who is "well-trained" but indifferent to the general needs and vascillating moods of the child with minimal brain-injury.

The teacher can expect great variability in the child's day to day performance. A bit of knowledge or a skill apparently mastered one day may be completely foreign to the child the following day. Some days the child will be alert, accessible, and able; the next day he may be inept, and incompetent. A youngster who is usually good-natured will occasionally be irritable, destructive, and unapproachable. The reasons for this variability are found in two main sources:

1. The perceptually handicapped child's responsiveness to his environment. Events at home (visitors, an argument, etc.), disagreements with peers, even changeable weather, are quickly reflected in the child's school work and behavior.
2. The frustration encountered by the child in the learning situation. The child's reaction to this own "forgetting" from lesson to lesson can be very disturbing and embarrassing unless handled well by his teacher (and parents). The lack of retention is really the lack of understanding. Learning accomplished with insight and comprehension is well retained; that which is repeated automatically is soon lost.

The teacher must be able to recognize and handle the so-called' 'catastrophic" or "cataclysmic" reaction, if and when it occurs. This reaction may come about when a child is confronted with a situation which to him is overly difficult, hence threatening. To help counteract the perceptually

handicapped child's hyperactivity, short attention span, and distractibility, the ideal classroom is designed for a small number of students. The room is large enough to permit each child to be seated at a considerable distance from any other. There should be a minimum of pictures, murals, bulletin boards and other distracting visual materials in the classroom. The most suitable classroom is isolated as much as possible from the never absent sights and sounds from the outside. If the classroom is on the ground floor, the lower quarter of the windows can be covered with light paint or a light solid colored paper which will admit light but also screen the view.

A complete description of teaching methods is found in Volume I of **Psychopathology and Education of the Brain-Injured Child** by Alfred A. Strauss and Laura E. Lehtinen, published in 1947, by Crune and Stratton, New York.

Lessons should be planned to include motor activity—sorting, cutting, printing, manipulating counters or a gadget—even within the area of the child's desk.

Color cues will be utilized. For example, if contours of letters of the alphabet are clearly delineated with color cues, a child with a disturbance in the perception of form can possibly learn to recognize and distinguish the letters. In counting, the use of beads or dots of various colors will enable him to keep his place and proceed in an orderly fashion, combating the fluctuation of figure and ground and the resulting erratic procedure. While certain materials will provide manipulative activity, they are not games to increase motivation or to teach through play, but should have the feature of being possibly self-tutoring. Habituation through drill should be the last step of the brain-injured child's learning of academic skills. Repetition in learning is necessary, but it must come through frequent experiences on the child's part of insights and analysis. There are many other aspects of a curriculum for the brain-injured child that will be considered and possibly adapted to a program of instruction that will attempt to provide for the children's academic needs and abilities.

## TEACHER PREPARATION

A minimum of one quarter's study in an appropriate university combined with observation of similar experimental classes would be required. Prior to special training the teachers must have elementary certification and highly successful experience. In selection of teachers considerable attention would be given to personal qualifications.

## CRITERIA FOR EVALUATION OF THE PROJECT

The plan was to identify a large number of perceptually handicapped non-retarded children who would be suitable for the special class. We hoped there would be about one-hundred such children. Children for the first two classes were to be randomly selected. The other children formed a large control group and remained in regular classes. All children, both in the control group and the other class, have extensive psychological testing before the classes start. At one year intervals testing was repeated. In this way we could learn whether there were significant differences between the educational advancement of the children in the experimental classes and those in the control group.

## 1962-63 SCHOOL YEAR

In September, 1962, sixteen of the twenty-six children evaluated and determined "eligible" for this specific experimental program were selected for enrollment within the two experimental classes. Before the conclusion of the first twenty day period, two children of the initial group were withdrawn by the parents, and this left a pupil enrollment of six and eight respectively within the two experimental groups. The control group for this experimental program then consisted of the ten remaining children mentioned above, and each child in this latter group was enrolled in a regular class for the 1962-63 school year.

The initial enrollment of each child in each of the experimental groups was on a staggered basis with two children enrolled each week until the maximum enrollment was reached for each class.

For the first six weeks, the length of the school day was from 9:00 a.m. until 12:00 noon for each group. Following this period, the school day was then lengthened for each class until 2:30 pm. daily. The

half-day schedule was selected for several reasons: (i.e.) to give each teacher an opportunity to evaluate and perhaps determine the specific needs and abilities of each child; to attempt to plan learning experiences and prepare teaching materials accordingly; and it was felt that because the daily schedule and routine were too highly and strictly structured, and because the teaching is so individualized and intense, the children could only tolerate a half-day at the beginning of the school year. Primarily with the development of an instrument to measure and determine the aforementioned specific needs and abilities of each individual child, perhaps this time schedule can be greatly reduced for future classes.

During the month of November, 1962, both teachers assigned to this program spent a week observing an established program of this type—one in Tulsa, Oklahoma, and the other in Pontiac, Michigan. The funds for these visitations were provided by a local parent group. After a rather long search, a teacher's aide was assigned to each of the experimental groups during the month of February, 1963. The services of a teacher's aide were felt to be of vital importance in this program, especially in relation to assisting the teacher in the preparation of teaching aids and materials.

In addition to the measured academic growth of the children in the experimental groups, as the reader will note later in this paper relating to an evaluation of academic progress, there also were obvious constructive changes in behavior within many of the children. The teachers, as well as several of the parents, related to behavioral changes that resulted in the children being more socially and emotionally compatible within their total environment. Prior to the close of the 1962-63 school year, two children in the experimental classes had begun to successfully participate in several non-academic activities within regular classrooms.

The location of these two classes in a teacher training setting stimulated much lay and professional curiosity and sincere interest. Perhaps one of the best examples resulted when a student teacher was assigned to each experimental class. As was stated in the Experimental Plan, an adequate evaluation of all facets of this program will require an estimated minimum of three years. A statistical report relating to an evaluation of the academic progress of both the experimental and control groups is contained within this total paper.

## EXPERIMENTAL GROUP SCORE CHANGES FROM 1962 TO 1963*

| Child | Age at 1962 Testing | Reading 1962-63 | | Reading Improvement | Spelling '62-'63 | | Spelling Improvement | Arithmetic '62-'63 | | Arithmetic Improvement |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8-4 | 1.5 | 1.4 | -.1 | 0.3 | 2.6 | 2.3 | 2.3 | 4.5 | 2.2 |
| 2 | 8-2 | 1.5 | 1.5 | 0.0 | 1.5 | 2.7 | 1.2 | 1.5 | 4.5 | 3.0 |
| 3 | 7-9 | 2.3 | 2.2 | -.1 | 2.7 | 3.0 | .3 | 2.2 | 4.5 | 2.3 |
| 4 | 8-0 | 1.7 | 3.0 | 1.3 | 1.6 | 3.2 | 1.6 | 2.2 | 4.5 | 2.3 |
| 5 | 9-0 | 2.9 | 2.4 | .5 | 1.9 | 3.1 | 1.2 | 2.3 | 4.5 | 2.3 |
| 6 | 8-2 | 4.4 | 7.3 | 2.9 | 3.7 | 5.4 | 1.7 | 2.5 | 4.1 | 1.6 |
| 7 | 9-8 | 5.1 | 6.9 | 1.8 | 2.8 | 5.2 | 2.4 | 4.6 | 5.3 | .7 |
| 8 | 11-7 | 3.7 | 4.2 | -.5 | 3.1 | 4.6 | 1.5 | 2.7 | 4.5 | 1.8 |
| 9 | 11-0 | 3.7 | 5.1 | 1.4 | 3.5 | 4.0 | .5 | 4.2 | 4.8 | .6 |
| 10 | 9-7 | 2.7 | 3.8 | 1.1 | 2.1 | 3.3 | 1.2 | 2.5 | 3.6 | 1.1 |
| 11 | 8-9 | 2.1 | 3.0 | .9 | 1.9 | 2.4 | .5 | 2.0 | 3.5 | 1.5 |
| 12 | 9-11 | 2.5 | 3.8 | 1.3 | 2.0 | 3.0 | 1.0 | 3.5 | 4.4 | .9 |
| 13 | 10-5 | 3.6 | 5.9 | 2.3 | 2.9 | 5.2 | 2.3 | 3.1 | 5.4 | 2.3 |
| 14 | 10-0 | 3.5 | 4.2 | .7 | 2.6 | 4.4 | 1.8 | 3.3 | 4.9 | 1.6 |
| | | Mean difference: .96 | | Sum of differences: 19.5 | | | Sum of differences: 24.1 | | | |
| | | Sum of differences: 13.5 | | Mean difference: 1.4 | | | Mean difference: 1.7 | | | |

*The scores are from the Wide Range Achievement Test and are reported in grade levels.

## CONTROL GROUP SCORE CHANGES FROM 1962 TO 1963*

| Child | Age at 1962 Testing | Reading '62-'63 | | Reading Improvement | Spelling '62-'63 | | Spelling Improvement | Arithmetic '62-'63 | | Arithmetic Improvement |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8-0 | 2.5 | 3.7 | 1.2 | 2.5 | 2.9 | .4 | 2.3 | 4.5 | 2.2 |
| 2 | 9-2 | 2.9 | 3.8 | .9 | 2.6 | 3.1 | .5 | 2.9 | 3.1 | .2 |
| 3 | 8-5 | 2.7 | 4.0 | 1.3 | 3.4 | 3.4 | 0.0 | 2.3 | 3.9 | 1.6 |
| 4 | 11-6 | 3.8 | 4.0 | .2 | 3.0 | 2.0 | -1.0 | 4.2 | 3.8 | -.4 |
| 5 | 6-10 | 2.0 | 3.6 | 1.6 | 1.5 | 3.0 | 1.5 | 1.8 | 2.5 | .7 |
| 6 | 9-1 | 3.7 | 3.9 | .2 | 2.6 | 3.1 | .5 | 2.9 | 3.8 | .9 |
| 7 | 9-5 | 3.7 | 4.1 | .4 | 2.4 | 5.0 | 2.6 | 4.1 | 4.6 | .5 |
| 8 | 9-6 | 2.9 | 3.3 | .4 | 2.7 | 3.0 | .3 | 3.3 | 3.3 | 0.0 |
| 9 | 9-4 | 4.5 | 5.8 | 1.3 | 3.8 | 2.5 | -1.3 | 3.3 | 4.6 | 1.3 |
| 10** | 9-10 | 2.8 | --- | --- | 1.8 | --- | --- | 2.3 | --- | --- |
| | | Sum of differences: 7.5 | | Sum of differences: 3.5 | | | Sum of differences: 7.0 | | | |
| | | Mean difference: .83 | | Mean difference: .39 | | | Mean difference: .78 | | | |

* Scores are from the Wide Range Achievement Test and are reported in grade levels.

**Moved from city and was not available for follow-up testing in 1963. Her mother reported by phone that she had failed this past year in her regular class.

# BRIEF SUMMARY

| | | Difference in improvement—Experimental Group over Control Group |
|---|---|---|
| **Reading** | | |
| The average grade level progress in the experimental group | .96 | .13 |
| The average grade level progress in the control group | .83 | |
| **Spelling** | | |
| The average grade level progress in the experimental group | 1.4 | 1.01 |
| The average grade level progress in the control group | .39 | |
| **Arithmetic** | | |
| The average grade level progress in the experimental group | 1.7 | .92 |
| The average grade level progress in the control group | .78 | |

## 1963-64 SCHOOL YEAR

The apparent success of the above mentioned two classes and the growing need for this specific instructional program prompted the decision to open four more classes in September, 1963. Thirty-one children who were evaluated and determined eligible for this specific experimental program, were enrolled in the new classes.

The initial enrollment again was on a staggered basis with two children being added each two days until the maximum enrollment was attained for each class, with the length of the school day also remaining approximately the same.

The academic growth of the children the second year was very good, and in some instances almost phenomenal. On the Reading test, only one child showed no improvement but the same child gained four months in Spelling and eight months in Arithmetic. All others gained from four months to a remarkable 4.5 years. Strangely enough this child showed no gain in Arithmetic and a four month's loss in Spelling. One child showed no improvement in Spelling, yet gained over two years in Reading and three months in Arithmetic. Other than these three instances the children improved from two months to 3.3 years in Spelling, and from one month to 1.9 years in Arithmetic. The average improvement for the four classes was 1.3 years in Reading, nine months in Spelling and nine months in Arithmetic as shown in Exhibit IB, groups 2A, 2B, 2C and 2D.

In April, 1964, one child was placed in a regular fourth grade class on a trial basis and successfully remained there, and has continued to maintain grade level the following two academic years.

In addition to the academic growth of the children (note Exhibit IA) there again were obvious constructive changes in behavior and attitudes. The growth made in the areas of recessive and expressive language enabling the child to better understand what was being required of him, and also enabling him to better express himself verbally, added to their self-confidence. As interpreted by clinicians, the improvement in self-image concept was vividly portrayed in many of the drawings produced by the children. At the beginning of the year when one child drew a picture of himself, he always drew other people or another person with him for help and each person always had a gun for protection. When the teacher insisted that he draw a picture of himself alone—this he reluctantly did, but he still kept his gun for protection. Another picture, drawn the latter part of March, 1964, drawn spontaneously, shows this same eight year old boy going happily on his way to play ball! Teachers and parents continued to report behavioral changes as to the children being more socially and emotionally compatible within their total environment. These are things the test reports cannot show but are vital in the process of teaching these children so they may again enter a regular classroom and be "a part of" their class instead of "apart from" the class. Because of the improvement in these areas, the teachers feel that their academic growth will be greater next year.

To measure the perceptual growth the children were again given the Bender-Gestalt tests. Copies of the tests administered in 1963 and 1964 are included in this paper.

# IA

| Child | Age at 1964 Testing | Reading '63-'64 | | Reading Improvement | Spelling '63-'64 | | Spelling Improvement | Arithmetic '63-'64 | | Arithmetic Improvement |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12-0 | 6.1 | 7.9 | 1.8 | 5.1 | 5.3 | .2 | 4.5 | 4.7 | .2 |
| 2 | 11-7 | 4.2 | 5.1 | .9 | 3.6 | 3.8 | .2 | 4.2 | 4.6 | .4 |
| 3 | 12.3 | 4.5 | 5.0 | .5 | 3.4 | 3.8 | .4 | 3.4 | 4.5 | 1.1 |
| 4 | 11-6 | 3.3 | 3.9 | .6 | 3.0 | 3.2 | .2 | 3.3 | 4.6 | 1.3 |
| 5 | 12-4 | 2.7 | 4.0 | 1.3 | 2.1 | 2.8 | .7 | 4.6 | 4.7 | .1 |
| 6 | 11-9 | 5.9 | 10.4 | 4.5 | 6.0 | 5.6 | -.4 | 4.6 | 4.6 | 0 |
| 7 | 10-9 | | 3.6 | | | 2.8 | | | 3.6 | |
| 8 | 9-10 | 3.0 | 3.8 | .8 | 2.9 | 3.6 | .7 | 2.9 | 4.4 | 1.5 |
| 9 | 10-8 | 3.4 | 5.2 | 1.8 | 3.3 | 4.7 | 1.4 | 4.1 | 4.4 | .3 |
| 10 | 9-2 | 2.9 | 3.6 | .7 | 1.9 | 4.0 | 2.1 | 3.0 | 4.2 | 1.2 |
| 11 | 7-9 | 2.0 | 3.2 | 1.2 | 1.3 | 2.5 | 1.2 | 2.2 | 2.7 | .5 |
| 12 | 5-6 | 2.5 | 3.5 | 1.0 | 2.5 | 3.7 | 1.2 | 2.5 | 4.1 | 1.6 |
| 13 | 8-9 | 3.9 | 4.6 | .7 | 2.7 | 4.2 | 1.5 | 3.5 | 4.2 | .7 |
| 14 | 9-5 | 4.0 | 4.4 | .4 | 3.0 | 4.2 | 1.2 | 2.9 | 4.1 | 1.2 |
| 15 | 8-5 | | 2.4 | | | 2.8 | | | 2.7 | |
| 16 | 7-11 | 1.2 | 2.5 | 1.3 | 1.0 | 2.5 | 1.5 | 1.0 | 2.7 | 1.7 |
| 17 | 8-7 | 1.7 | 2.7 | 1.0 | 1.2 | 2.7 | 1.5 | 1.4 | 2.9 | 1.5 |
| 18 | 8-6 | 3.3 | 4.0 | .7 | 2.8 | 3.0 | .2 | 2.5 | 3.5 | 1.0 |
| 19 | 8-2 | 1.0 | 2.0 | 1.0 | 1.0 | 2.3 | 1.3 | 1.0 | 1.9 | .9 |
| 20 | 8-9 | 1.4 | 1.4 | 0 | 1.3 | 1.7 | .4 | 1.1 | 1.9 | .8 |
| 21 | 8-8 | 1.0 | 2.9 | 1.9 | 1.0 | 2.0 | 1.0 | 1.0 | 2.9 | 1.9 |
| 22 | 7-4 | 1.0 | 3.1 | 2.1 | 1.0 | 3.1 | 2.1 | 1.0 | 2.7 | 1.7 |
| 23 | 7-10 | 2.4 | 3.2 | .8 | 1.8 | 2.2 | .4 | 2.3 | 2.7 | .4 |
| 24 | 10-5 | 4.2 | 6.4 | 2.2 | 3.8 | 3.8 | 0 | 4.2 | 4.5 | .3 |
| 25 | 11-0 | 7.0 | 9.0 | 2.0 | 5.6 | 5.9 | .3 | 4.2 | 4.7 | .5 |
| 26 | 10-6 | 2.4 | 3.8 | 1.4 | 2.3 | 2.5 | .2 | 2.5 | 4.2 | 1.7 |
| 27 | 10-5 | 4.0 | 5.7 | 1.7 | 3.4 | 3.5 | .1 | 3.9 | 4.1 | .2 |
| 28 | 10-10 | 3.1 | 3.7 | .6 | 2.1 | 2.9 | .8 | 3.1 | 4.6 | 1.5 |
| 29 | 10-7 | 5.8 | 8.7 | 2.9 | 2.5 | 5.8 | 3.3 | 4.6 | 4.6 | 0 |
| 30 | 10-5 | | 3.2 | | | 2.5 | | | 3.3 | |
| 31 | 11-7 | 6.9 | 7.9 | 1.0 | 5.2 | 6.2 | 1.0 | 5.3 | 7.1 | 1.8 |
| 32 | 13-4 | 4.2 | 5.4 | 1.2 | 4.6 | 5.9 | 1.3 | 4.5 | 5.8 | 1.3 |
| 33 | 11-6 | 3.8 | 4.5 | .7 | 3.3 | 4.2 | .9 | 3.6 | 4.2 | .6 |
| 34 | 12-6 | 4.0 | 6.4 | 2.4 | 2.0 | 5.3 | 3.3 | 3.8 | 6.2 | 2.4 |
| 35 | 11-10 | 3.8 | 4.9 | 1.1 | 3.0 | 5.6 | 2.6 | 4.4 | 5.2 | .8 |
| 36 | 12-4 | 5.9 | 7.3 | 1.4 | 5.2 | 6.7 | 1.5 | 5.4 | 7.5 | 2.1 |
| 37 | 10-10 | 4.2 | 5.6 | 1.4 | 4.4 | 5.6 | 1.2 | 4.9 | 5.2 | .3 |
| 38 | 9-11 | 4.4 | 8.3 | 3.9 | 3.7 | 6.6 | 2.9 | 2.5 | 4.1 | 1.6 |
| 39 | 10-0 | 1.5 | 3.6 | 2.1 | 2.7 | 2.9 | .2 | 4.5 | 5.0 | .5 |
| 40 | 10-8 | 3.0 | 3.9 | .9 | 2.4 | 3.4 | 1.0 | 3.5 | 4.7 | 1.2 |
| 41 | 9-8 | 2.2 | 4.8 | 2.6 | 3.0 | 4.6 | 1.6 | 4.5 | 5.0 | .5 |
| 42 | 10-4 | 1.4 | 3.5 | 2.1 | 2.6 | 2.8 | .2 | 4.5 | 5.3 | .8 |
| 43 | 10-0 | 3.0 | 4.7 | 1.7 | 3.2 | 3.8 | .6 | 4.5 | 5.0 | .5 |
| 44 | 10-10 | 3.1 | 4.4 | 1.3 | 2.3 | 3.3 | 1.0 | 4.1 | 5.0 | .9 |
| 45 | 10-11 | 3.9 | 5.3 | 1.4 | 3.1 | 4.0 | .9 | 3.8 | 5.0 | 1.2 |
| 46 | 10-11 | 2.4 | 4.5 | 2.1 | 3.1 | 3.7 | .6 | 4.5 | 5.0 | .5 |
| 47 | 10-7 | 4.6 | | | | | | 4.6 | | |
| Sum of differences | | | | 63.1 | | | 44.5 | | | 41.2 |
| Mean difference | | | | 1.5 | | | 1.0 | | | .96 |

## IB

| GROUP | READING | | SPELLING | | ARITHMETIC | |
|---|---|---|---|---|---|---|
| | Sum of Difference | Mean Difference | Sum of Difference | Mean Difference | Sum of Difference | Mean Difference |
| 1-A | 13.1 | 1.6 | 14.7 | 1.8 | 10.9 | 1.4 |
| 1-B | 15.4 | 1.9 | 6.1 | .8 | 6.1 | .8 |
| Totals | 28.5 | 1.8 | 20.8 | 1.3 | 17.0 | 1.1 |
| 2-A | 9.6 | 1.6 | 1.3 | .2 | 3.1 | .5 |
| 2-B | 6.6 | .9 | 9.3 | 1.3 | 7.0 | 1.0 |
| 2-C | 8.8 | 1.1 | 8.4 | 1.1 | 9.9 | 1.2 |
| 2-D | 10.8 | 1.3 | 4.7 | .8 | 4.2 | .7 |
| Totals | 35.8 | 1.3 | 23.7 | .9 | 24.2 | .9 |

# Significant Developments and Accomplishments During 1964-65

1. The apparent success of the original two classes in 1962 plus four additional classes in 1963 prompted the decision to open four new classes in September, 1964, and another in January, 1965, thus bringing the total to eleven for the 1964-65 school year. From the initial experimental group of sixteen the enrollment increased most sixfold to a staggering ninety-four pupil total. Of these ninety-four, eighteen returned to regular classrooms by the end of the 1964-65 school year (Three 3rd, five 4th, six 5th, four 6th). Sixty-nine were assigned to classes for the perceptually handicapped and six withdrew from the program entirely. One died.

2. The academic growth of the children was immediately evident in majority of cases, ranging from .3 year's improvement in Reading during 1964-65 to 5.0 years as measured by the Wide Range Achievement Test at the beginning and end of the school year (Exhibit IA). Spelling improvement ranged from .1 to 3.5 years. The average improvement for all eleven classes was **eight** months in Reading, **six** months in Spelling and **six** months in Arithmetic as shown in Exhibit IB. (Two schools had achievement scores "not available", thus a lowered **mean** improvement.)

3. As a measure of perceptual growth all of the ninety-four children were administered Bender-Gestalt tests.

In review, the **Purpose** of this application was:

1. To establish classes for perceptually handicapped children in selected schools within the Memphis City School System, Division of Special Education in cooperation with the University of Tennessee School of Medicine, Memphis State University Campus School, Memphis Board of Education and the Memphis State University Department of Psychology.

Extensive psychological testing would be administered to a large number of perceptually handicapped non-retarded children who would be identified as suitable for special class placement. The children then would be randomly divided into an experimental and a control group (to remain in regular classes in schools). Testing would be repeated at one year intervals to determine any significant differences between educational advancement of the experimental and control groups.

2. To develop curricula for perceptually handicapped children which would best provide and meet the educational needs and abilities of these children.

3. To determine the best methods of identifying this type of exceptional child.

4. To identify factors which indicate that the individual child is capable of returning to the regular classroom.

5. Systematic follow-up of students returned to regular classes to determine the relative success of the program.

Regarding **Methodology**, the organizational structure and procedures have been:

| 1. Year | School(s) | No. of Classes |
|---|---|---|
| 1962-63 | Campus School | 2 |
| 1963-64 | White Station | 4 |
| 1964-65 | Grahamwood | 2 |
| | Sherwood | 2 |
| | Leath | 1 |
| | Total | 11 |

Eleven experimental classes have been established in five city schools in cooperation with the agencies in **Purpose 1** above.

2. Selection of pupils for the classes has been made from a large number of children classified as perceptually handicapped who were referred by both private and public agencies. Records for each pupil have included extensive psychological testing by a qualified psychologist, and a general evaluation as well as a comprehensive cumulative account of scholastic achievement (and difficulties) prior to placement. Those selected for admission to the Experimental Classes have been within the chronological range of 6-14, and have had at least average over-all intellectual ability (90+IQ) with no defects of hearing and vision and no apparent aphasoid language problems.

3. Initial enrollment has continued to be on a staggered basis with two children added each two days until the maximum enrollment (8) has been attained for each class. Pupil admission on this basis has allowed each teacher to assess the strengths and weaknesses of each individual on an intensive basis from the beginning. For the first two months, the school day is from 8:45-11:45 A.M. Following this period the day is extended until 2:30 P.M. The half-day schedule (1) has seemed to allow good pupil adjustment and orientation to the program in that the pupil tolerance level for a highly structured, intensely individualized routine has been gradually established and lengthened; and (2) the teachers have been given an opportunity to determine specific needs and abilities of each child and to prepare suitable material to meet the needs.

4. Evaluation of each pupil and his subsequent return to the regular classroom has been considered a major factor in the program.

| (Committee) | (Criteria) |
|---|---|
| Special Teacher | WRAT September and April |
| Director of Special Education | Social behavior |
| Psychologist | Emotional Behavior |
| School Principal | Bender-perceptual growth |

5. The selection and use of attendants or teacher aides in each classroom has seemed to add immeasurably to teacher-pupil effectiveness. The prospective attendants were carefully screened and selected according to the following criteria: had to be high school graduates; were "sound" physically, mentally and emotionally; had sensitivity to the needs and abilities of perceptually handicapped children; were able to work under the direction and the supervision of the teacher. The attendants have freed the teachers from the tedious and monumental task of much of the preparation of suitable perceptual training and instructional material for each individual child, thus allowing more effective and efficient teaching on the part of the teacher during class hours. In addition, the role of the attendant (teacher's aide) as "teacher-helper" has allowed more individual attention and instruction for each child in that the teacher-aide attendant works with some on a flexible basis.

6. In the area of development of curricula, the educational environment was planned to counteract as much as possible the general organic disturbances of behavior and attention. Special teaching methods were employed to remedy and, in some cases, to overcome particular learning disabilities. The instructional plan focused on basic skills of reading, writing, and arithmetic to implement future progress in school. Some specific materials which have proved of great merit are:

**1. The Frostig Program for Development of Visual Perception**

The Frostig Program for the Development of Visual Perception covers five areas—Perception of Position in Space, Perception of Spatial Relationships, Perceptual Constancy, Visual Motor Coordination, Figure Background Perception.

The program is presented with a minimum of technical terminology. It gives many exercises for the children to do before the worksheets are made from preprinted master sheets. This program is especially designed for young children but is also designed to be used in remedial programs for children of any age whose visual perceptual development is impaired.

**2. The Hay-Wingo method of teaching reading and language skill**

**Reading With Phonics** uses three basic methods of learning—auditory, visual and kinesthetic.

First the child learns the short sound of each vowel—one vowel is taught at a time—followed by ten consonant sounds, learned one at a time. He combines the vowels and consonants into blends, syllables and words, then into sentences. With these fifteen sounds the child can independently unlock more than one hundred fifty familiar words and in so doing, many new words, and in so doing, concentrate on meaning. These are all words he can analyze; he does not need to depend solely upon memory of word formation, on context, or pictures.

Since many of the perceptually handicapped children see and hear only a part of a word or a sentence, this method helps to correct this difficulty—they learn to recognize one letter at a time by sight and sound, then another is added and they learn

that, etc., until the whole word is learned—both seeing it and hearing it. From building words the children progress step by step to sentences and stories.

**3. Continental Press duplicating materials**

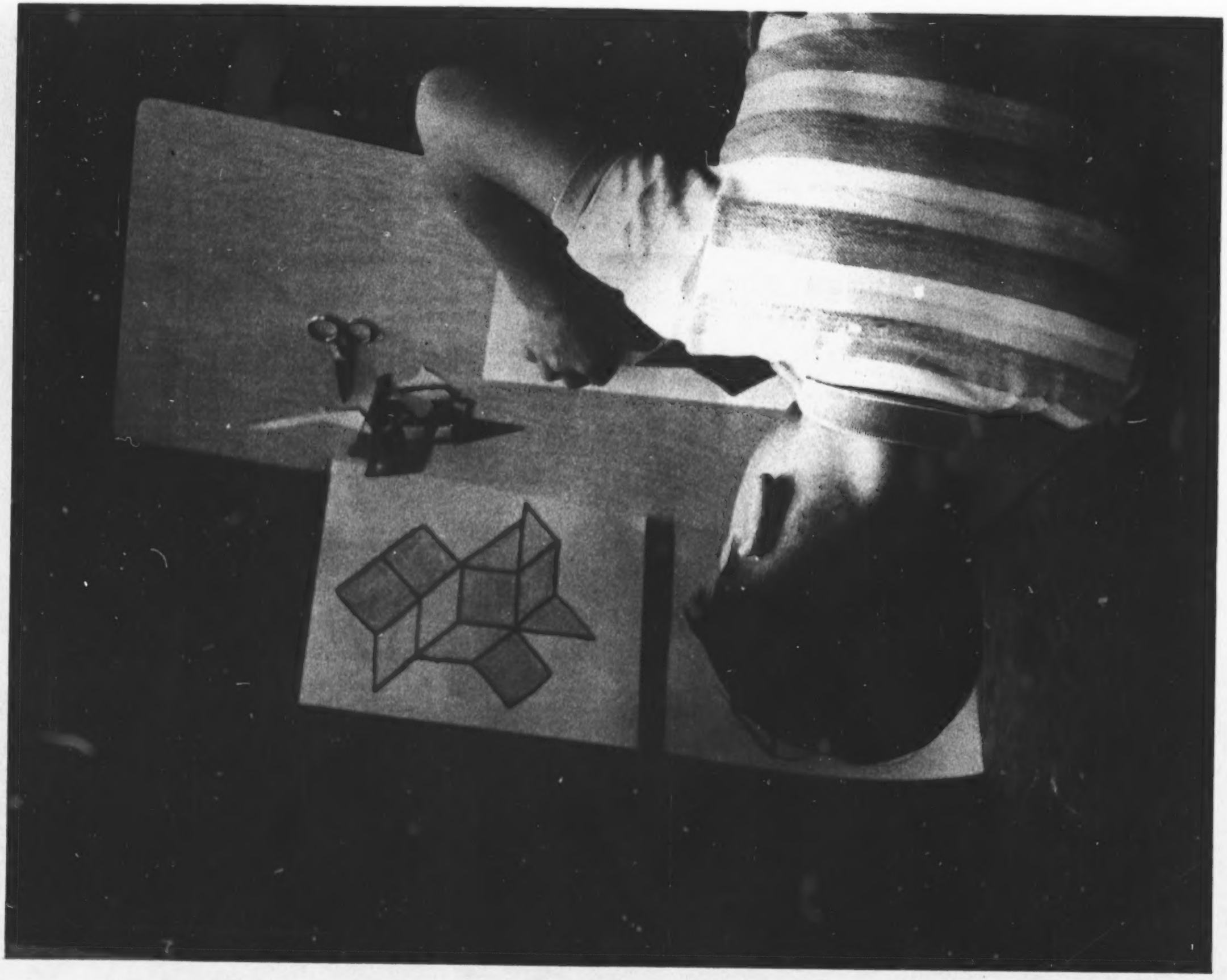
Materials which have been used successfully:

1. Thinking Skills—Non Reading Levels 1 and 2, Kindergarten or first grade
2. Reading—Thinking Skills Pre-Primer Levels—Through Grade 6, Level 2
3. Visual Motor—Levels 1 and 2
4. Visual Discrimination—Levels 1 and 2
5. Language Development series
6. Time
7. Measurement
8. Money

These are pre-printed master sheets so that as many as necessary may be made for each child and cued to fit his needs.

The Thinking Skills and Read and Think skills are particularly good. The individual sheets are not marked as to grade level, so each child can be given material on his reading level cued for his specific needs, thus decreasing distractibility and increasing attention span. Through these exercises work meaning, paragraph meaning and reasoning ability have increased and reading levels have been raised.

In addition to the usual training (visual, visual-motor and visual coordination), a great contribution was made to the overall development of the children in the form of a comprehensive program of gross and fine motor coordination training. This was accomplished largely through the efforts of Mrs. Betty Owens, instructor in the Department of Physical Education, Memphis State University, and former co-worker with Dr. Newell C. Kephart of Purdue. In her role as Consultant, Mrs. Owen evaluated each child individually. organized a definite curriculum of physical motor training for each pupil, and worked with the teachers in carrying out the program successfully. Teacher morale was given a boost as an interesting side effect in that many doubts ("Am I doing the right thing?") were dispelled by having correct expert physical education instructions and guidelines by Mrs. Owens.



# IA

| Child | Age at 1965 Testing | Total Days Present | Reading '64-'65 | | Reading Improvement | Spelling '64-'65 | | Spelling Improvement | Arith. '64-'65 | | Arithmetic Improvement |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9-1 | 82 | 2.0 | 2.9 | .9 | 2.2 | 2.8 | .6 | 3.0 | 2.9 | -.1 |
| 2 | 8-1 | 77 | 1.6 | 1.4 | -.2 | 1.5 | 1.8 | .3 | 1.6 | 2.9 | 1.3 |
| 3 | 10-6 | 80 | 4.2 | 4.5 | .3 | 3.5 | 4.2 | .7 | 3.6 | 4.9 | 1.3 |
| 4 | 7-8 | 72 | 1.7 | 2.5 | .8 | 1.6 | 1.9 | .3 | 1.6 | 2.9 | 1.3 |
| 5 | 10-9 | 82 | 2.5 | 5.0 | 2.5 | 5.0 | 4.6 | -.4 | 3.9 | 5.0 | 1.1 |
| 6 | 7-7 | 80 | 1.7 | 2.5 | .8 | 1.6 | 2.2 | .6 | 1.5 | 2.9 | 1.4 |
| 7 | 9-11 | 77 | 2.8 | 3.3 | .5 | 1.6 | 2.5 | .9 | 2.3 | 3.9 | 1.6 |
| 8 | 9-7 | 78 | 2.0 | 3.3 | 1.3 | 2.0 | 2.5 | .5 | 2.0 | 3.8 | 1.8 |
| 9 | 14-3 | 159 | 4.2 | 4.1 | -.1 | 4.6 | 5.4 | .8 | 4.5 | 5.0 | .5 |
| 10 | 12-6 | 159 | 3.8 | 3.6 | -.2 | 3.3 | 3.3 | .0 | 3.6 | 3.6 | .0 |
| 11 | 12-9 | 157 | 3.8 | 3.6 | -.2 | 3.0 | 3.5 | .5 | 4.4 | 4.8 | .4 |
| 12 | 11-9 | 178 | 3.1 | 3.4 | .3 | 2.3 | 3.3 | 1.0 | 4.1 | 4.8 | .7 |
| 13 | 10-11 | 177 | 3.0 | 4.3 | 1.3 | 3.2 | 3.7 | .5 | 4.3 | 4.6 | .3 |
| 14 | 11-11 | 176 | 3.9 | 4.5 | .6 | 3.1 | 3.5 | .4 | 3.8 | 4.7 | .9 |
| 15 | 11-10 | | | | | | | | | | |
| 16 | 11-11 | 180 | 2.4 | 3.3 | .9 | 3.1 | 3.4 | .3 | 4.5 | 3.8 | .7 |
| 17 | 10-10 | 162 | 4.4 | 7.8 | 3.4 | 3.7 | 6.4 | 2.7 | 2.5 | 3.6 | 1.1 |
| 18 | 10-5 | 180 | 4.1 | 4.1 | .0 | NA | 4.0 | | 4.1 | 4.4 | .3 |
| 19 | 10-11 | 171 | 1.5 | 3.1 | 1.6 | 2.7 | 3.0 | .3 | 4.5 | 4.2 | -.3 |
| 20 | 11-7 | 174 | 3.0 | 3.6 | .5 | 2.4 | 3.3 | .9 | 3.5 | 3.1 | -.4 |
| 21 | 10-7 | 169 | 2.2 | 3.5 | 1.3 | 3.0 | 3.3 | .3 | 4.5 | 4.4 | -.1 |
| 22 | 11-4 | 177 | 1.4 | 2.7 | 1.3 | 2.6 | 2.2 | -.4 | 4.5 | 3.9 | -.6 |
| 23 | 8-8 | 165 | 2.0 | 3.7 | 1.7 | 1.3 | 2.9 | 1.6 | 2.2 | 2.7 | .5 |
| 24 | 10-6 | 172 | 3.3 | 4.5 | 1.2 | 3.1 | 3.3 | .2 | 3.1 | 4.5 | 1.4 |
| 25 | 8-5 | 142 | | | | | | | | | |
| 26 | 10-5 | | | | | | | | | | |
| 27 | 9-0 | 172 | NA | 2.2 | | NA | 1.8 | | NA | 2.7 | |
| 28 | 9-6 | 177 | NA | 5.6 | | NA | 4.4 | | NA | 3.3 | |
| 29 | 9-4 | 180 | NA | 5.1 | | NA | 3.6 | | NA | 4.1 | |
| 30 | 7-4 | | NA | | | NA | | | NA | | |
| 31 | 7-9 | 180 | NA | 1.3 | | NA | 1.3 | | NA | 2.5 | |
| 32 | 9-1 | 167 | NA | 5.6 | | NA | 1.5 | | NA | 2.3 | |
| 33 | 8-5 | 165 | NA | 2.6 | | NA | 4.4 | | NA | 3.3 | |
| 34 | 10-7 | 167 | NA | 3.1 | | NA | 2.6 | | NA | 2.7 | |
| 35 | 10-5 | 176 | 2.4 | 2.4 | .0 | 2.2 | 2.4 | .2 | 3.1 | 2.7 | -.4 |
| 36 | 11-9 | 174 | 3.4 | 3.8 | .4 | 2.2 | 3.6 | 1.4 | 2.9 | 3.5 | .6 |
| 37 | 11-9 | 180 | NA | 6.8 | | NA | 7.1 | | NA | 4.2 | |
| 38 | 10-11 | | NA | | | NA | | | NA | | |
| 39 | 9-10 | 179 | 1.6 | 2.0 | .4 | 1.7 | 1.8 | .1 | 1.7 | 2.9 | 1.2 |
| 40 | 11-7 | 178 | NA | 7.4 | | NA | 5.8 | | NA | 3.5 | |
| 41 | 11-1 | 176 | 5.4 | 6.1 | .7 | 4.7 | 5.0 | .3 | 5.4 | 4.6 | -.8 |
| 42 | 12-6 | | 3.0 | | | 2.2 | | | 2.5 | | |
| 43 | 11-8 | 180 | 3.1 | 3.8 | .7 | 3.4 | 3.0 | -.4 | 3.4 | 3.5 | .1 |
| 44 | 12-7 | 44 | | 6.5 | | | 5.4 | | | 4.9 | |
| 45 | 8-7 | 180 | NA | 3.4 | | NA | 3.6 | | NA | 3.9 | |
| 46 | 8-9 | 171 | 1.2 | 1.1 | .1 | .7 | 0 | -.7 | 1.0 | .0 | -1.0 |
| 47 | 9-3 | 166 | 1.5 | 2.2 | .7 | | 2.9 | | 2.8 | 3.5 | .7 |

## IA (Continued)

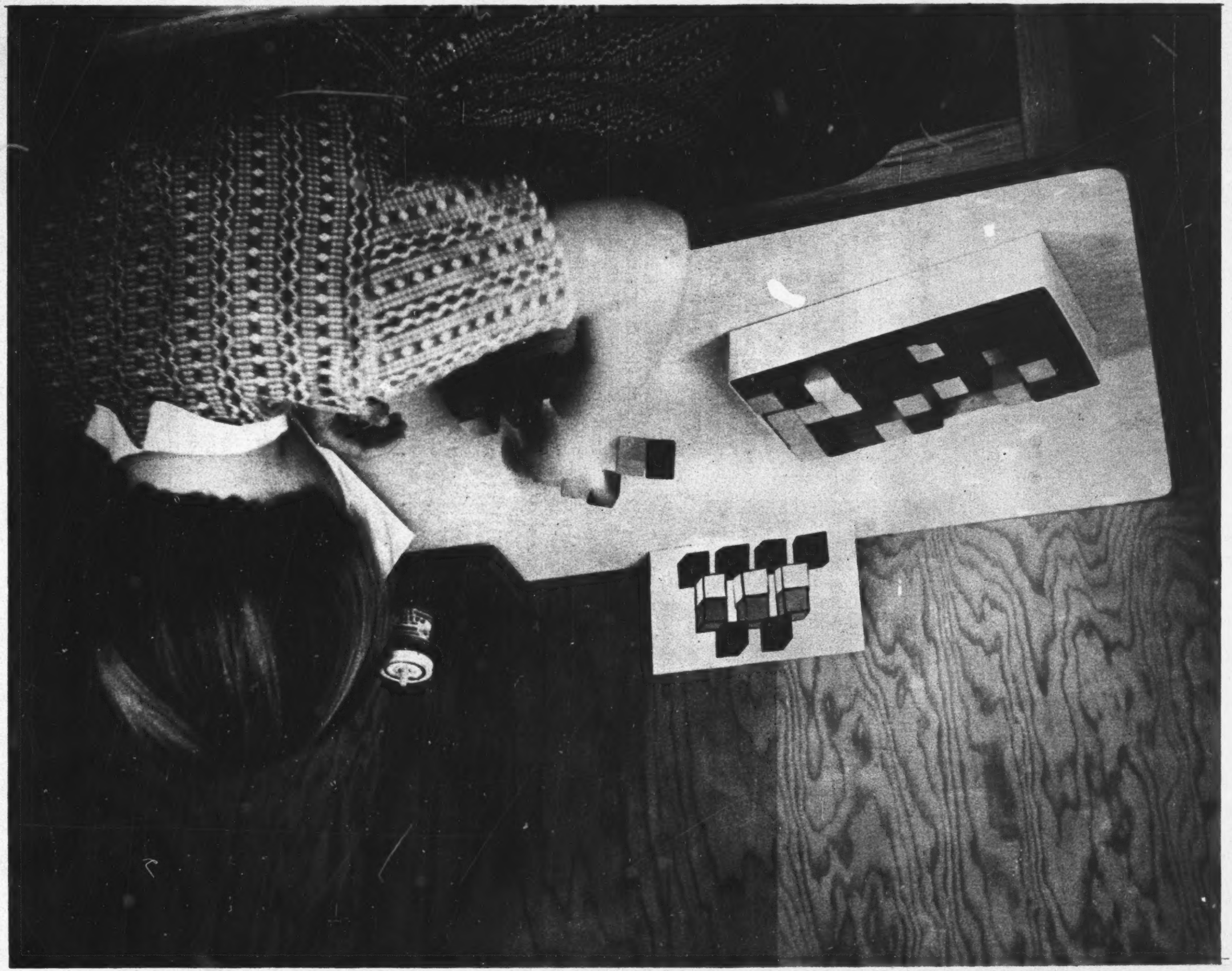
| Child | Age at 1965 Testing | Total Days Present | Reading '64-'65 | | Reading Improvement | Spelling '64-'65 | | Spelling Improvement | Arith. '64-'65 | | Arith. Improvement |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | 9-11 | 178 | 3.1 | 3.8 | .7 | 2.5 | 3.0 | .5 | 2.7 | 3.6 | .9 |
| 49 | 7-4 | 170 | 2.2 | 2.8 | .6 | 1.7 | 2.7 | 1.0 | 0 | 3.5 | 1.7 |
| 50 | 8-5 | 174 | 1.8 | 3.1 | 1.3 | 1.9 | 3.0 | 1.1 | 1.8 | 3.5 | 1.7 |
| 51 | 8-4 | 179 | NA | 3.9 | | NA | 3.7 | | NA | 4.2 | |
| 52 | 10-0 | 171 | 2.0 | 4.8 | 2.8 | 2.0 | 4.6 | 2.6 | 2.0 | 4.7 | 2.7 |
| 53 | 11-9 | 175 | NA | 8.5 | | NA | 5.8 | | NA | 5.2 | |
| 54 | 9-6 | 180 | NA | 8.2 | | NA | 4.6 | | NA | 4.7 | |
| 55 | 11-3 | 173 | NA | 4.0 | | NA | 2.9 | | NA | 5.0 | |
| 56 | 9-0 | 159 | NA | 3.2 | | NA | 2.5 | | NA | 4.4 | |
| 57 | 9-8 | 174 | NA | 4.5 | | NA | 3.4 | | NA | 4.6 | |
| 58 | 9-6 | 156 | NA | 3.0 | | NA | 2.3 | | NA | 4.4 | |
| 59 | 11-3 | 178 | NA | 4.5 | | NA | 4.2 | | NA | 5.0 | |
| 60 | 10-6 | 156 | NA | 3.7 | | NA | 2.6 | | NA | 4.1 | |
| 61 | 11-4 | 37 | NA | 3.1 | | NA | 3.1 | | NA | 4.8 | |
| 62 | 9-4 | 174 | 1.9 | 3.5 | 1.6 | 1.8 | 3.5 | 1.7 | 2.5 | 4.1 | 1.6 |
| 63 | 10-9 | 172 | 3.0 | 4.1 | 1.1 | 2.9 | 4.0 | 1.1 | 2.9 | 4.7 | 1.8 |
| 64 | 10-11 | 166 | 2.8 | 3.3 | .5 | 2.3 | 2.9 | .6 | | 3.5 | |
| 65 | 10-1 | 163 | | 3.8 | | | 4.4 | | | 4.7 | |
| 66 | 11-7 | 176 | 3.4 | 4.8 | 1.4 | 3.3 | 4.6 | 1.3 | 4.1 | 4.9 | .8 |
| 67 | 10-5 | 178 | 2.5 | 4.0 | 1.5 | 2.5 | 3.8 | 1.3 | 2.5 | 4.7 | 2.2 |
| 68 | 9-8 | 172 | 3.9 | 5.8 | 1.9 | 2.7 | 5.1 | 2.4 | 3.5 | 4.7 | 1.2 |
| 69 | 10-4 | 178 | 4.0 | 5.1 | 1.1 | 3.0 | 4.8 | 1.8 | 2.9 | 4.7 | 1.8 |
| 70 | 8-11 | 170 | 1.2 | 3.6 | 2.4 | 1.0 | 2.3 | 1.3 | 1.3 | 3.5 | 2.2 |
| 71 | 7-7 | 178 | 2.4 | 3.4 | 1.0 | 1.6 | 2.4 | .8 | 2.3 | 3.3 | 1.0 |
| 72 | 9-6 | 175 | 1.7 | 3.7 | 2.0 | 1.2 | 2.7 | 1.5 | 1.4 | 3.6 | 2.2 |
| 73 | 9-6 | 178 | 3.3 | 4.8 | 1.5 | 2.8 | 3.2 | .4 | 2.5 | 3.6 | 1.1 |
| 74 | 9-1 | 173 | 3.9 | 3.2 | -.7 | 3.1 | 2.7 | -.4 | 3.6 | 2.7 | -.9 |
| 75 | 9-7 | 172 | 1.0 | 3.2 | 2.2 | 1.0 | 2.9 | 1.9 | 1.6 | 2.9 | 1.3 |
| 76 | 8-4 | 172½ | 2.7 | 4.2 | 1.5 | 3.1 | 3.3 | .2 | 3.1 | 3.3 | .2 |
| 77 | 8-9 | 178 | 3.4 | 3.8 | .4 | 1.8 | 2.6 | .8 | 2.3 | 3.3 | 1.0 |
| 78 | 12-6 | 177 | 4.2 | 6.2 | 2.0 | 3.6 | 4.4 | .8 | 4.2 | 5.9 | 1.7 |
| 79 | 13-2 | 93 | NA | | | NA | | | NA | | |
| 80 | 9-3 | 97 | 4.1 | | | 3.5 | | | 2.3 | | |
| 81 | 13-0 | 180 | 4.0 | 5.4 | 1.4 | | 5.3 | | 5.3 | 6.7 | 1.4 |
| 82 | 12-5 | 175 | 3.3 | 4.1 | .8 | 3.0 | 4.2 | 1.2 | 3.3 | 5.5 | 2.2 |
| 83 | 12-4 | 179 | 4.4 | 6.1 | 1.7 | 5.2 | 5.8 | .6 | 4.2 | 5.3 | 1.1 |
| 84 | 12-8 | 177 | 5.9 | 9.2 | 3.3 | 6.0 | 6.3 | .3 | 4.6 | 6.5 | 1.9 |
| 85 | 10-7 | 123 | 4.3 | 8.0 | 3.7 | 4.0 | 5.5 | 1.5 | 2.9 | 4.7 | 1.8 |
| 86 | 11-5 | 176 | 4.2 | 7.1 | 2.9 | 3.8 | 5.4 | 1.6 | 4.2 | 4.6 | .4 |
| 87 | 11-11 | 180 | 7.0 | 9.3 | 2.3 | 5.6 | 7.0 | 1.4 | 4.2 | 5.5 | 1.3 |
| 88 | 11-5 | | 2.4 | | | 2.3 | | | 2.5 | | |
| 89 | 13-2 | 180 | 4.5 | 5.6 | 1.1 | 3.4 | 5.2 | 1.8 | 3.3 | 4.5 | 1.2 |
| 90 | 11-5 | 174 | 4.0 | 5.8 | 1.8 | 3.4 | 5.5 | 2.1 | 3.9 | 4.7 | .8 |
| 91 | 12-2 | 88½ | 5.8 | 8.8 | 3.0 | 2.5 | 7.3 | 4.8 | 4.6 | 5.8 | 1.2 |
| 92 | 11-4 | 178 | | 4.0 | | | 2.7 | | | 4.2 | |
| 93 | 13-3 | 175 | 2.7 | 4.7 | 2.0 | 2.1 | 3.7 | 1.6 | 4.6 | 5.0 | .4 |
| 94 | 13-0 | 90 | 8.0 | 13.0 | 5.0 | 7.4 | 9.0 | 1.6 | 4.9 | 5.3 | .4 |
| Sum of Differences | | | | | 79.3 | | | 54.7 | | | 57.6 |
| Mean Difference | | | | | .8 | | | .6 | | | .6 |

## IB

| Group | Reading | | Spelling | | Arithmetic | |
|---|---|---|---|---|---|---|
| | Sum of Diff. | Mean Diff. | Sum of Diff. | Mean Diff. | Sum of Diff. | Mean Diff. |
| A | 6.9 | .9 | 3.5 | .4 | 9.7 | 1.2 |
| B | 6.0 | .7 | 6.2 | .7 | 4.6 | .5 |
| C | 7.6 | .8 | 2.9 | .3 | .8 | .1 |
| D | NA | | NA | | NA | |
| E | 2.2 | .2 | 1.6 | .2 | .7 | .1 |
| F | 6.2 | .8 | 4.5 | .6 | 8.5 | 1.1 |
| G | NA | | NA | | NA | 1.2 |
| H | 9.1 | 1.0 | 10.2 | 1.3 | 9.4 | |
| I | 10.3 | 1.3 | 6.5 | .8 | 8.1 | 1.0 |
| J | 12.9 | 1.6 | 4.4 | .6 | 10.1 | 1.3 |
| K | 18.1 | 2.0 | 14.9 | 1.7 | 5.7 | .6 |
| Mean | | .8 | | .6 | | .6 |

## IC

| School | Retained | Within Program Transferred | Returned to Regular Class | Withdrew | Died |
|---|---|---|---|---|---|
| Campus I | | 7 | 2-5th, 1-6th | | |
| Campus II | 5 | 2 | | | 1 |
| Grahamwood I | 4 | 1 | 1-3rd, 1-4th | 1 | |
| Grahamwood II | 6 | 2 | | 2 | |
| Sherwood I | 4 | 2 | 1-3rd, | 1 | |
| Sherwood II | 8 | | 1-5th | | |
| Leath I | 8 | | | | |
| White Sta. I | 7 | | 1-3rd | | |
| White Sta. II | 3 | | 4-4th, 1-5th | | |
| White Sta. III | | 5 | 1-6th | 2 | |
| White Sta. IV | | 5 | 2-6th, 2-5th | | |



After three consecutive years, we have gained much valuable information and constructive insight relating to the various facets and phases of this experimental instructional program.

Perhaps the most immediately obvious fact concerns the pressing need to continue to plan for additional classes. Since this program's inception increased awareness, interest and concern for the neurologically impaired child has grown tremendously, all resulting in a long waiting list.

It is also obvious that there is a great need to establish an additional phase or plan of instructional approach, other than the self-contained classroom, if we are going to come anywhere near meeting the present needs and abilities of the child identified as neurologically impaired. An itinerant teacher program of instruction (perceptual training) will be attempted in the near future based on the theory that the perceptual training needs and abilities of many minimally involved neurologically impaired youngsters can be adequately provided for through a plan or program of this type. The children involved in this phase of perceptual training program would remain assigned to and participate in most of the activities in a regular classroom, and would spend from one to three hours per week in small groups served by the itinerant teacher.

Another point of concern and pressing need is our present attempt to better determine and define the criteria and mechanics of returning these children to the regular classroom. The when and how these children should be returned must be determined on an individual case basis but we can perhaps be more specific or exact as to what levels of specific attainment must be reached before such consideration is given.

A "Transition class will be at least a partial answer to this concern. A classroom environment and program of experiences that will assist the child concerned in making a smoother, more comfortable, reduced traumatic transition back to the regular classroom. A transition class enrollment not to exceed fifteen to twenty youngsters and manned by a teacher well-versed and skilled in the preparation and execution of learning experiences that will meet this specific child's present total needs and abilities.

The factor of vital concern and one in which we are constantly evaluating relates to the screening procedures of neurologically impaired children. As has been previously noted since the inception of this program we have utilized the Weschler Intelligence Scale, Bender Gestalt, Wide Range Achievement Test (Graham-Kendall is used in some cases) and a physical examination. It is felt that perhaps the Wide Range Achievement Test alone does not give a true enough picture of the child's academic growth for grade placement back into the regular classroom. Other tests, to be used wih the W.R.A.T. will be considered during the 1966-67 school year.

Another obvious point is that there is a constant need to further pursue the study and evaluation of curriculum content, procedures, methods and materials relating to perceptual training.

In the four years that the experimental program has existed, the importance of parent understanding and cooperation in this program has over and over been demonstrated. Plans and effort will be expended to the fullest to provide each of the special class teachers and principals concerned with knowledge, techniques and skills of parent counseling. This is not a matter that can be resolved over night or in a few training sessions. It will be a program of a continuing nature and one very valuable to any instructional attempt of this nature.

*The End . . . . .*

**The ultimate goal of the perceptual training for children with learning disorders is to place these children back into the regular elementary classroom . . . and even for those few who are unable to return, the future is much brighter and filled with hope.**

# Exhibits

**As referred to in the body of this report, the following pages contain a very small sampling of evidence relating to the visual and visual motor perceptual growth of several youngsters involved in this Special Education program.**

Exhibit I-A "Bud" # 3 Oct. 1963

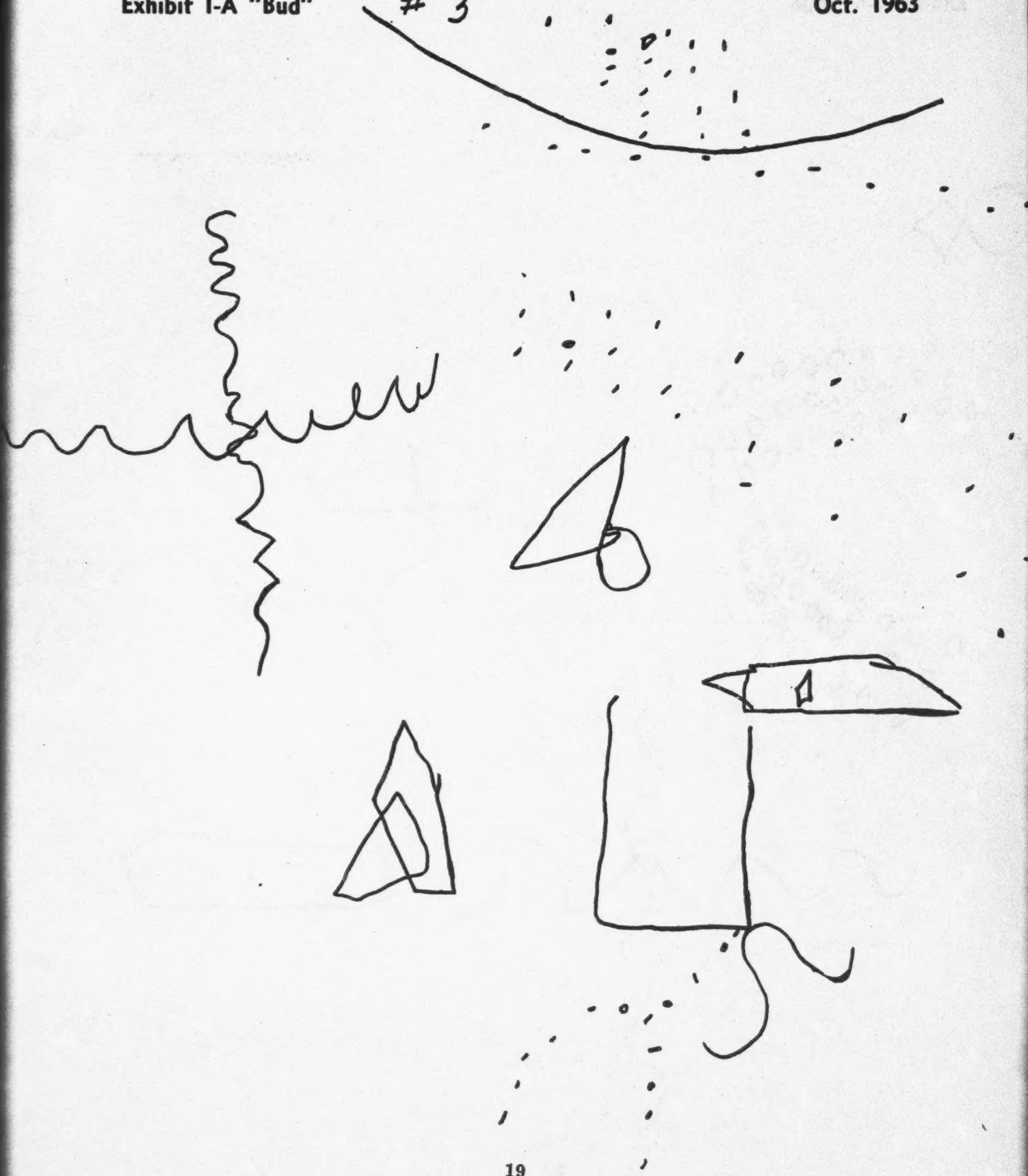


**Exhibit I-B "Bud"**

6/2/64

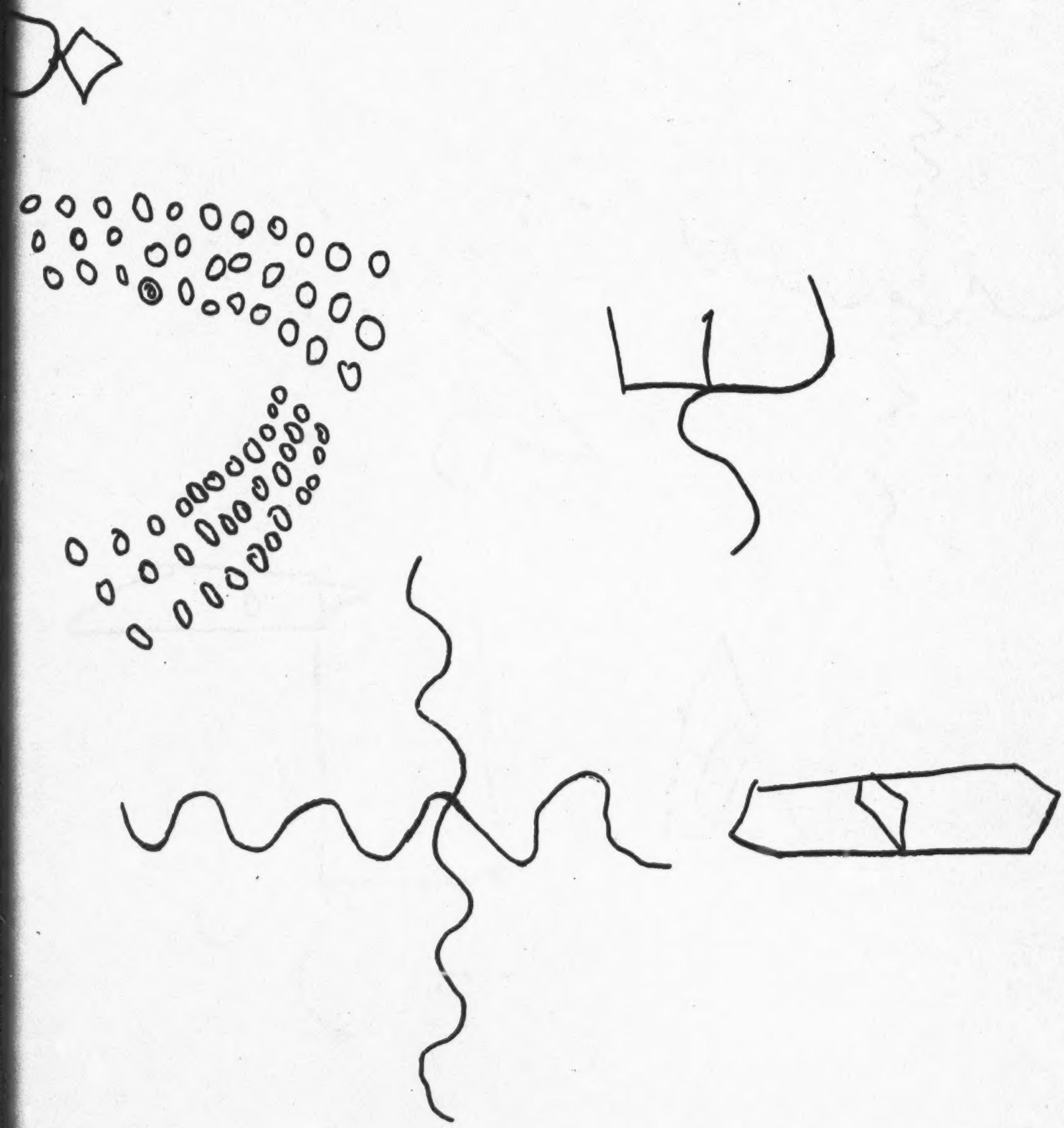
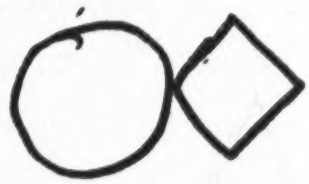
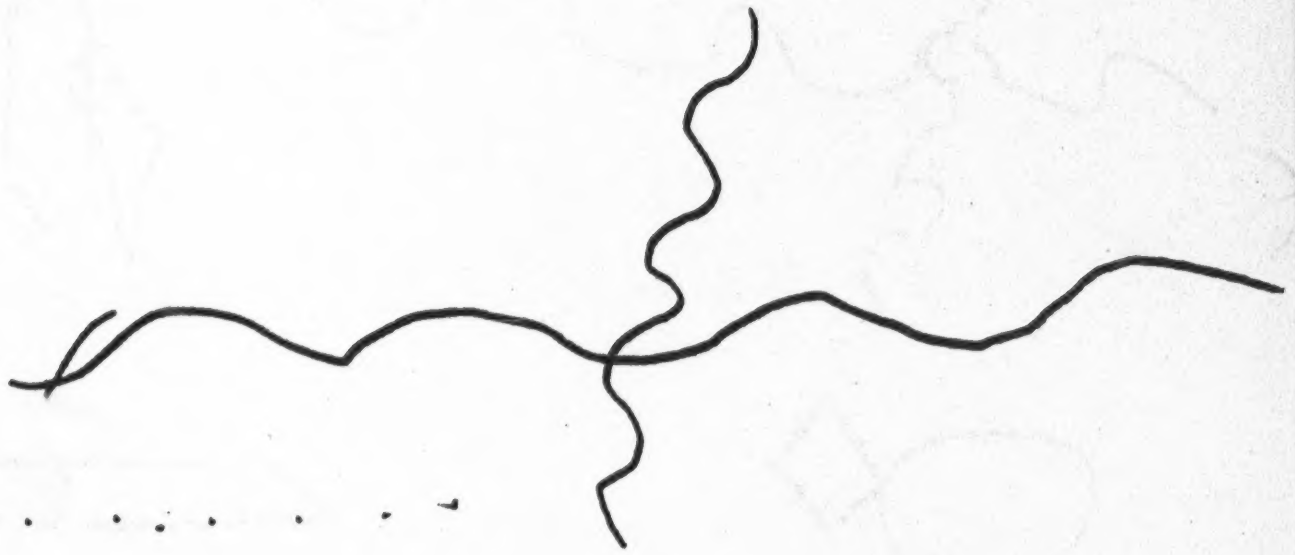
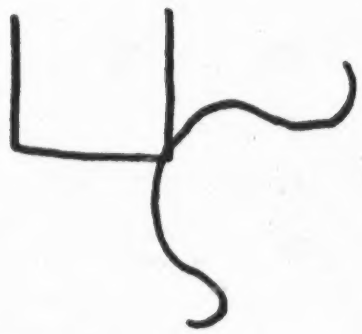


**Exhibit I-C "Bud"**







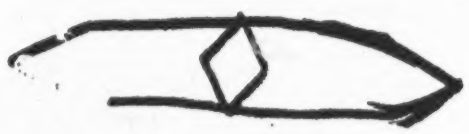
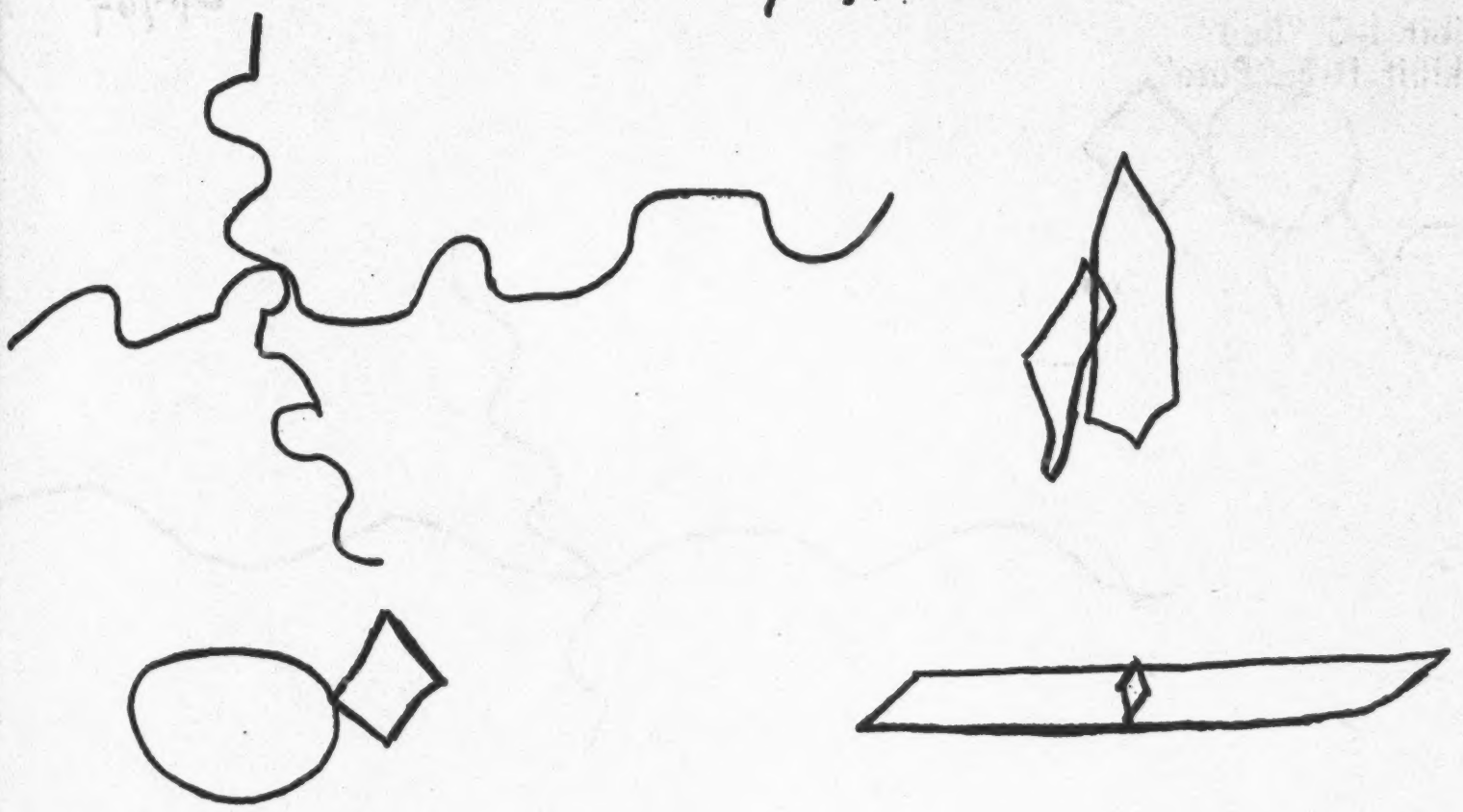
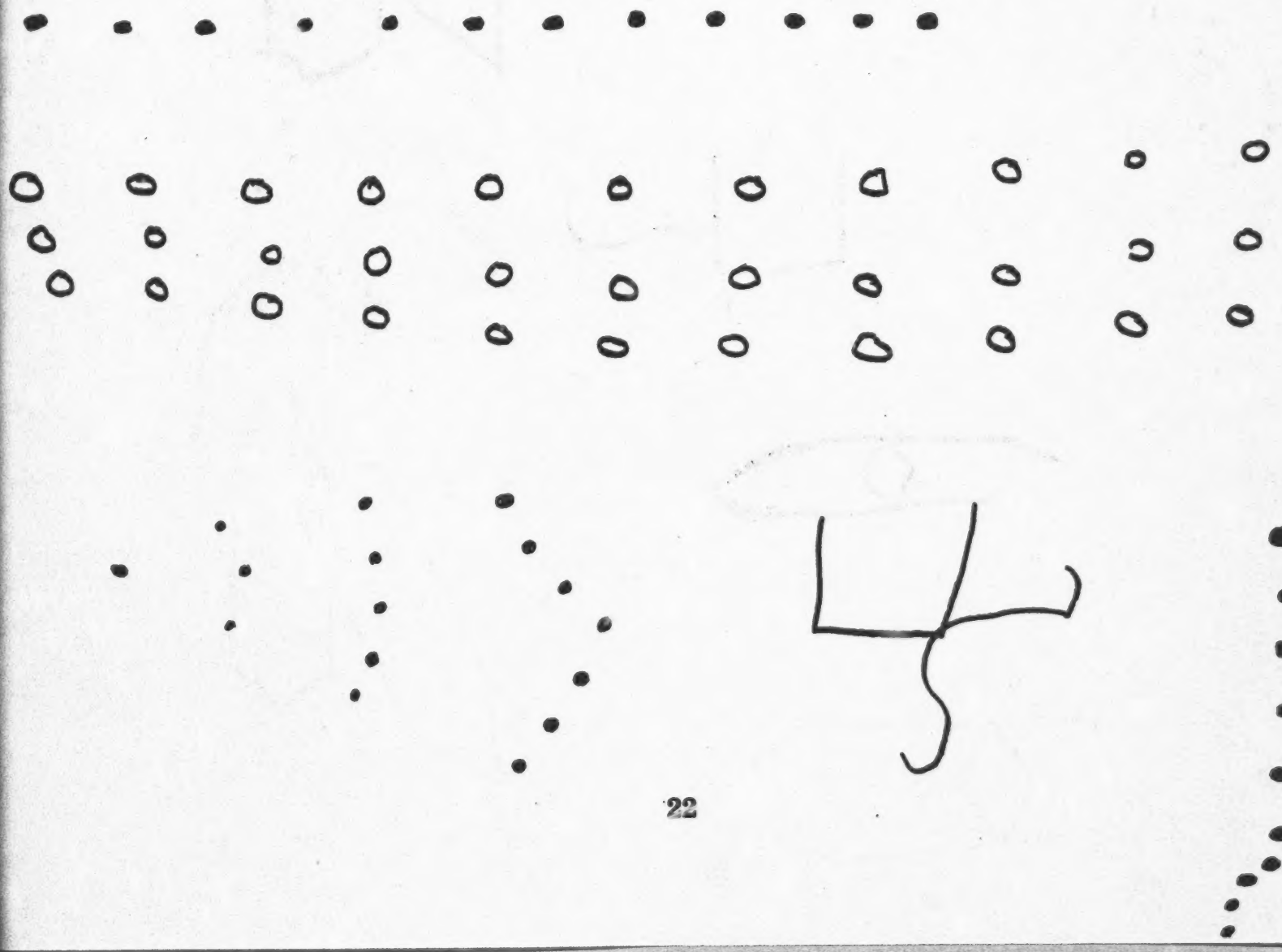


**Exhibit II-A "Pete"**

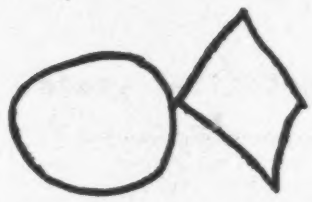
7-12-63





6/2/64

**Exhibit II-B "Pete"**



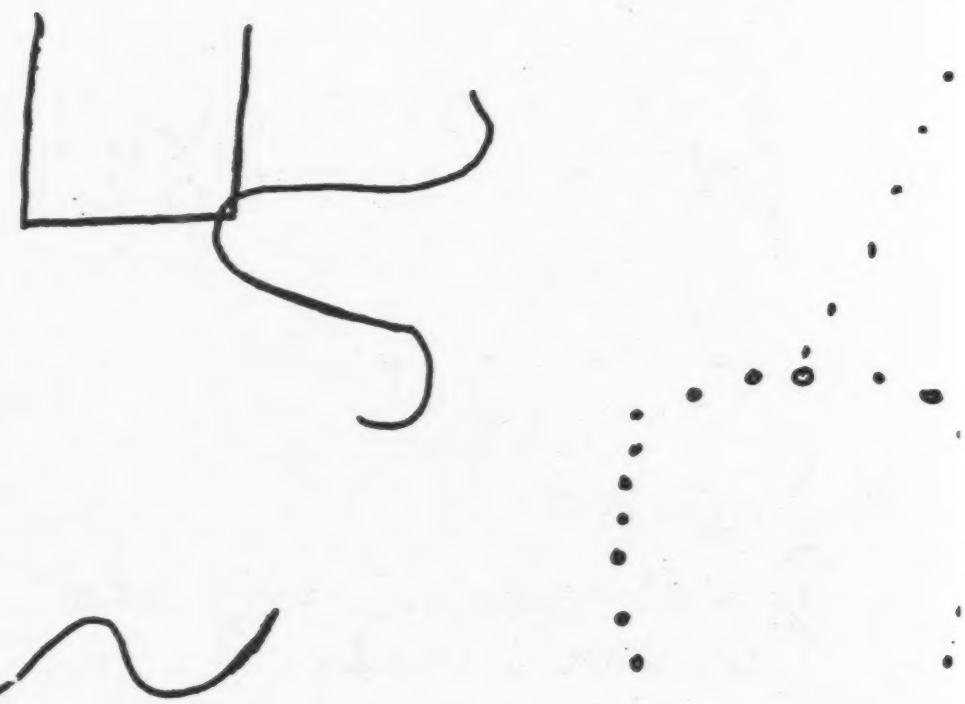


**Exhibit III-A "Susie"** **Sept. 1963**

This child had been in first grade two years, and was retained to repeat first grade a third time.

Reading Grade 1.0

Spelling Grade 1.0

Arithmetic Grade 1.6

x m hn WI is
pN ARHTEOCES Dridcy

* Important
Doesn't recognize symbols
Can work orally

**Exhibit III-B "Susie"**

5-5-64

Age----8-8
Sex---- M
Reading Grade----1.8
Spelling Grade----2.0
Arithmetic Grade----2.9

1. cat
2. in
3. go
4. man
5. will
6. and
7. ben
8. mat
9. cut
10. dbs

Exhibit IV-A "Woody"
8-6 years old

Oct. 1963

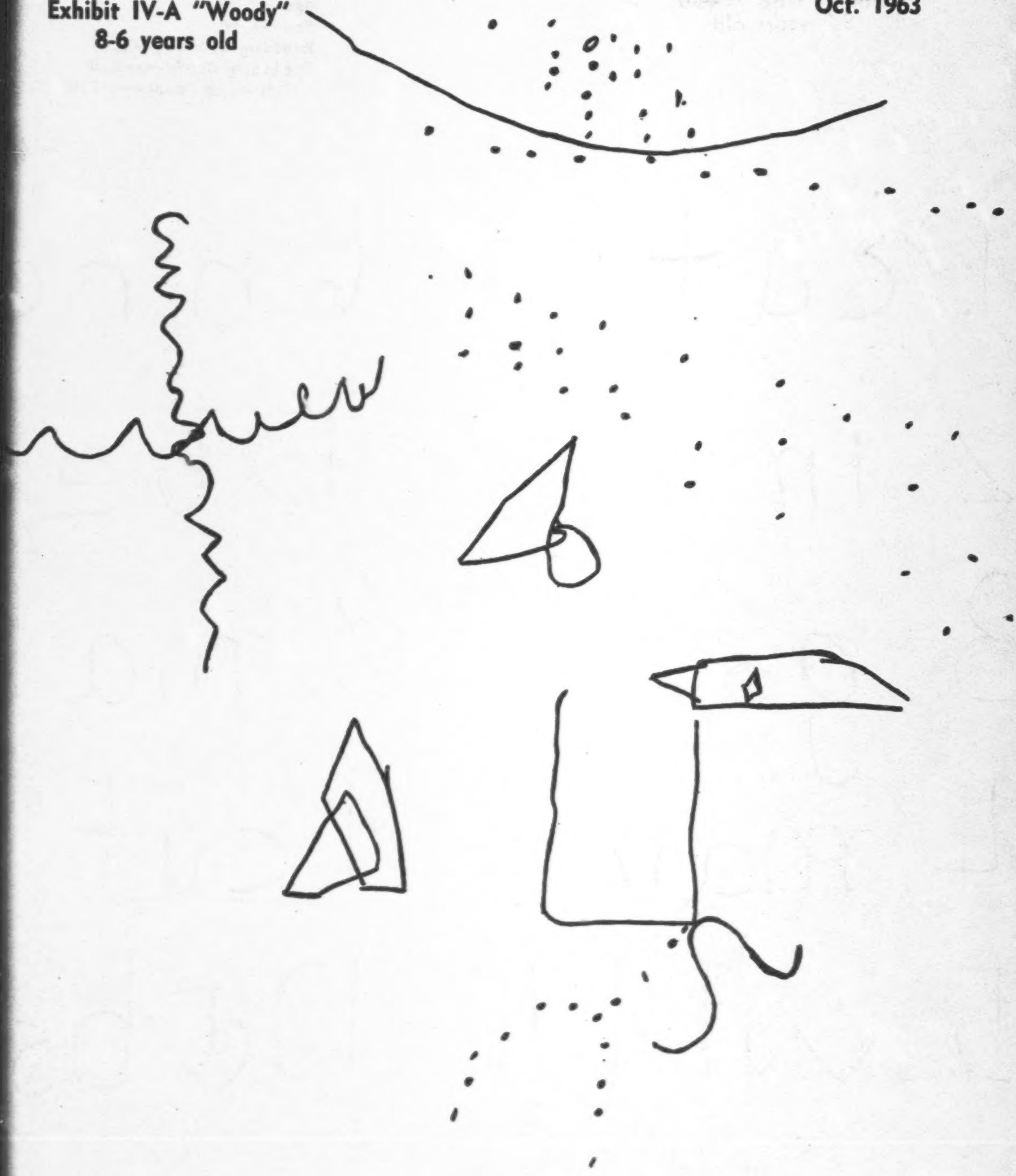


**Exhibit IV-B "Woody"**
**9-2 years old**

6/2/6

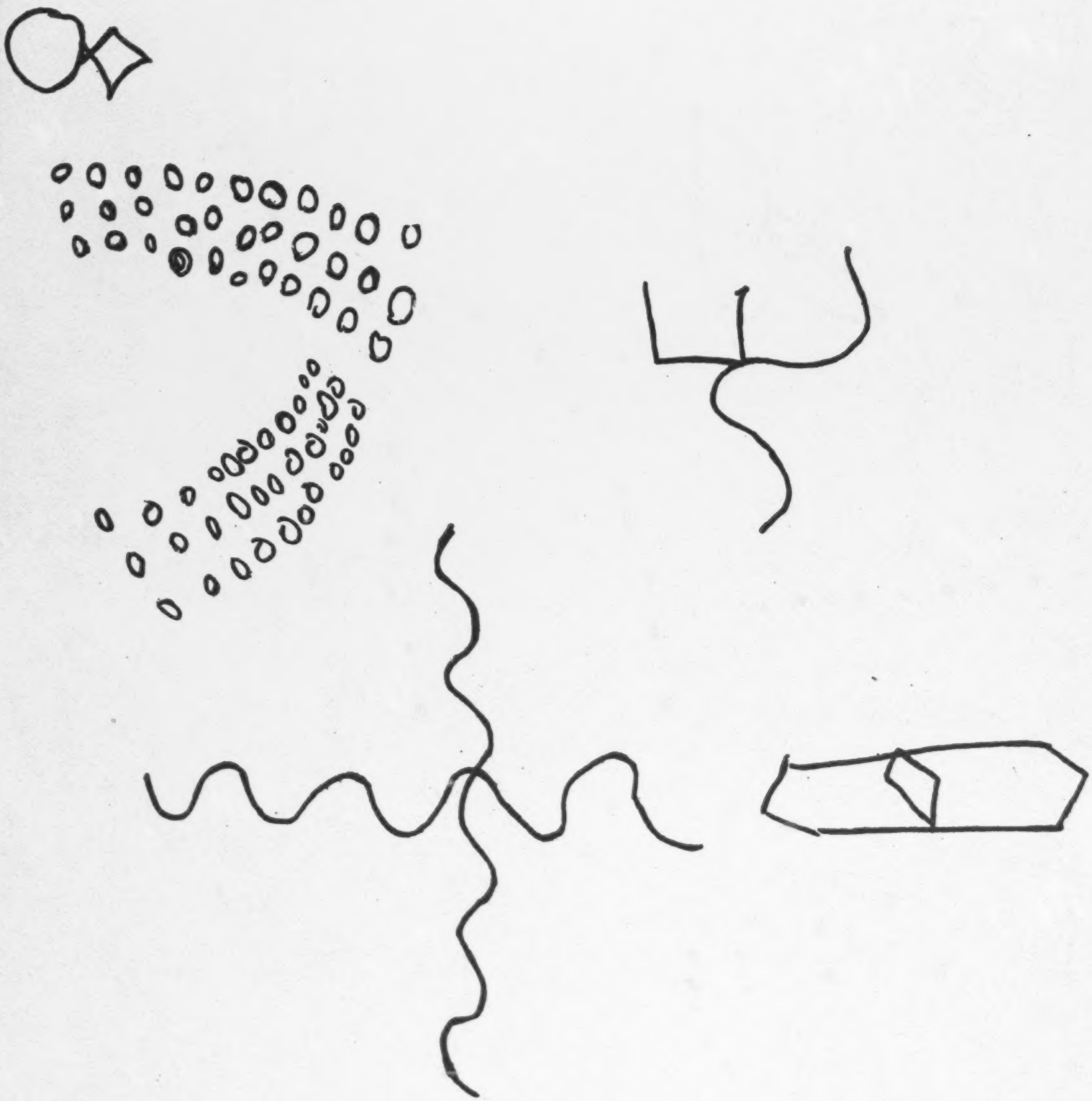
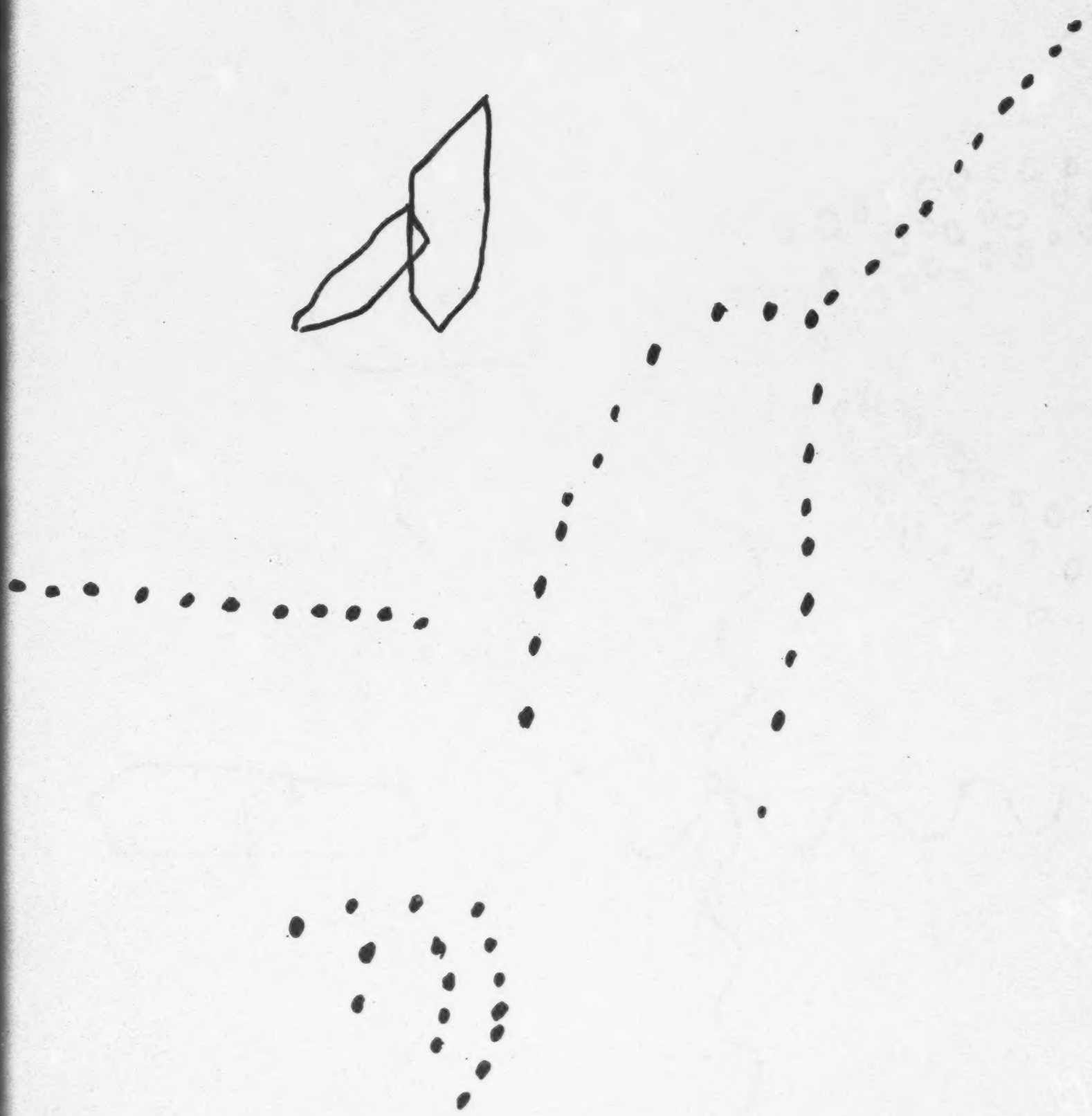


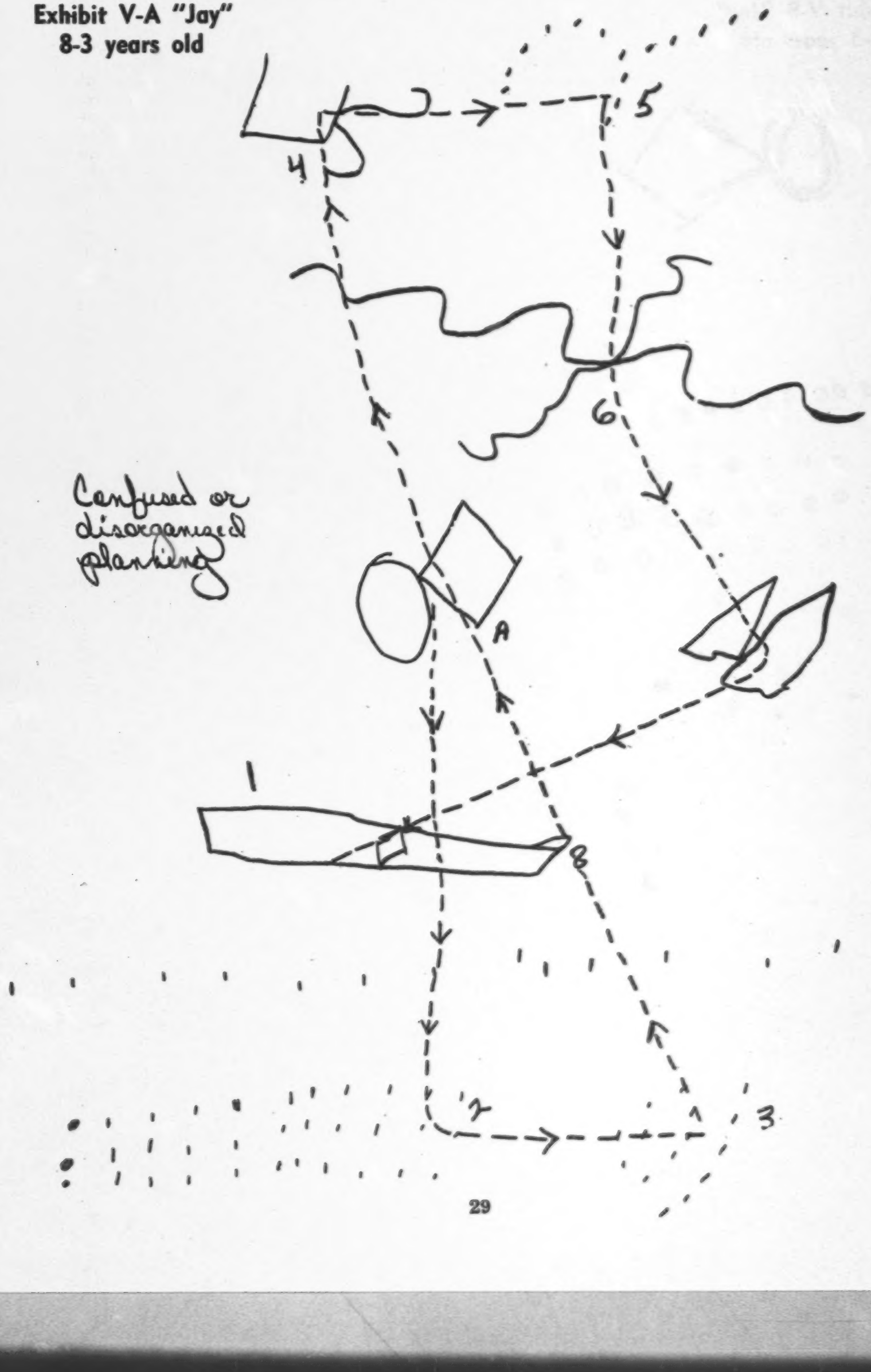
**Exhibit IV-B (Cont.)**

4/2/64



5-29-63

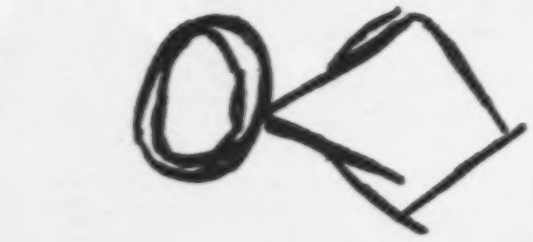
**Exhibit V-A "Jay"**
**8-3 years old**

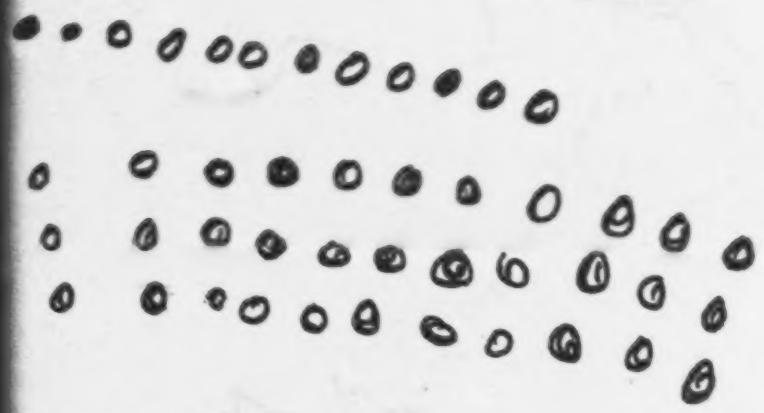



Confused or disorganized planning

5-25-64

**Exhibit V-B "Jay"**
**9-3 years old**





5-25-64

**Exhibit V-B (Cont.)**

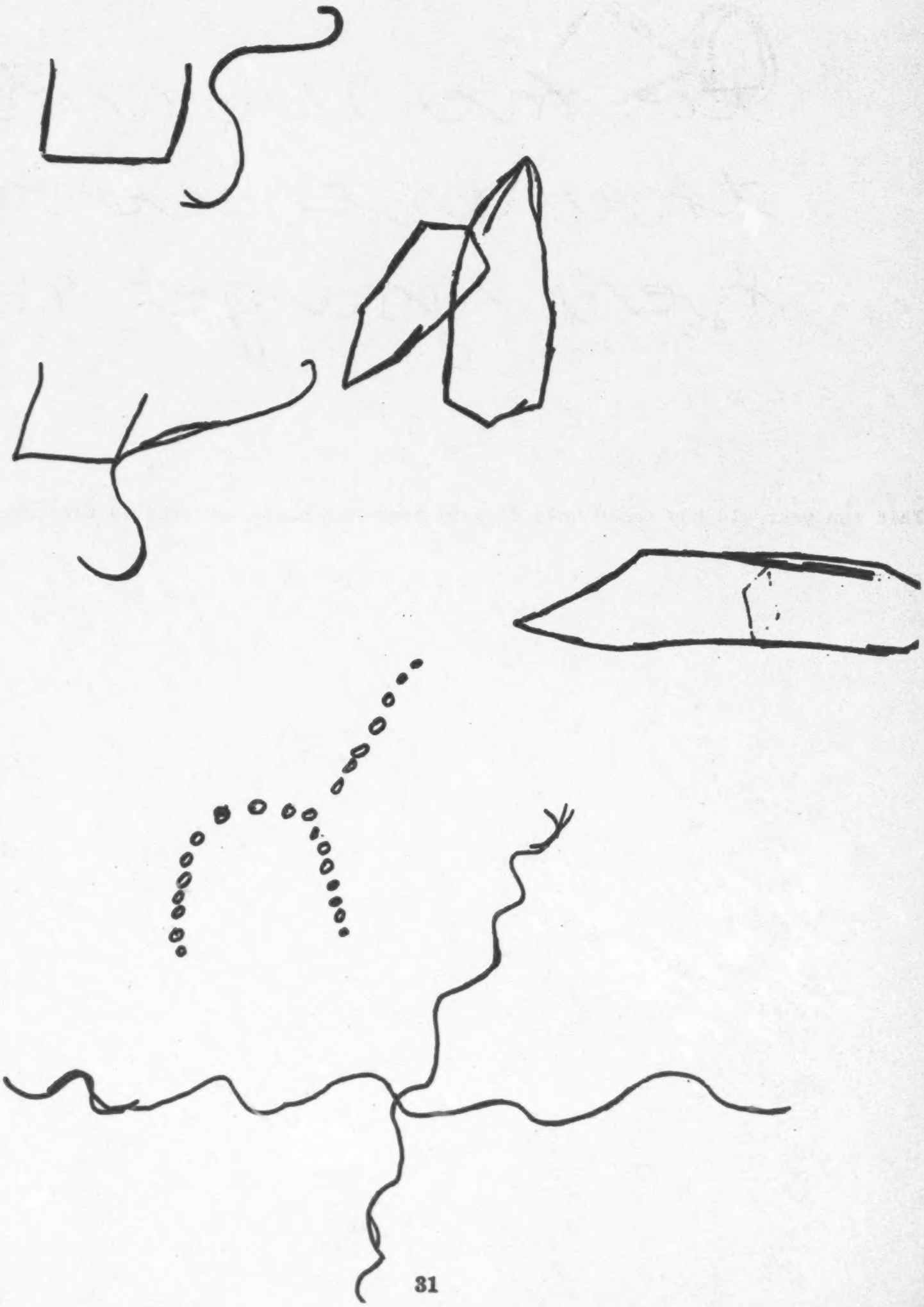


**Exhibit VI-A**

November, 1963

to me is on no in
the are see oneoun
her you get now

**This ten year old boy could only do very poor manuscript writing in September, 1963.**

Exhibit VI-B

3/11/64

This man will come to my house.

Who is this man?

The boy and girl went up the hill.

Who are the boy and

Exhibit VI-C

cat and run let x

in boy sack x

go make him must

man cut cuke x tran x

will dress well x

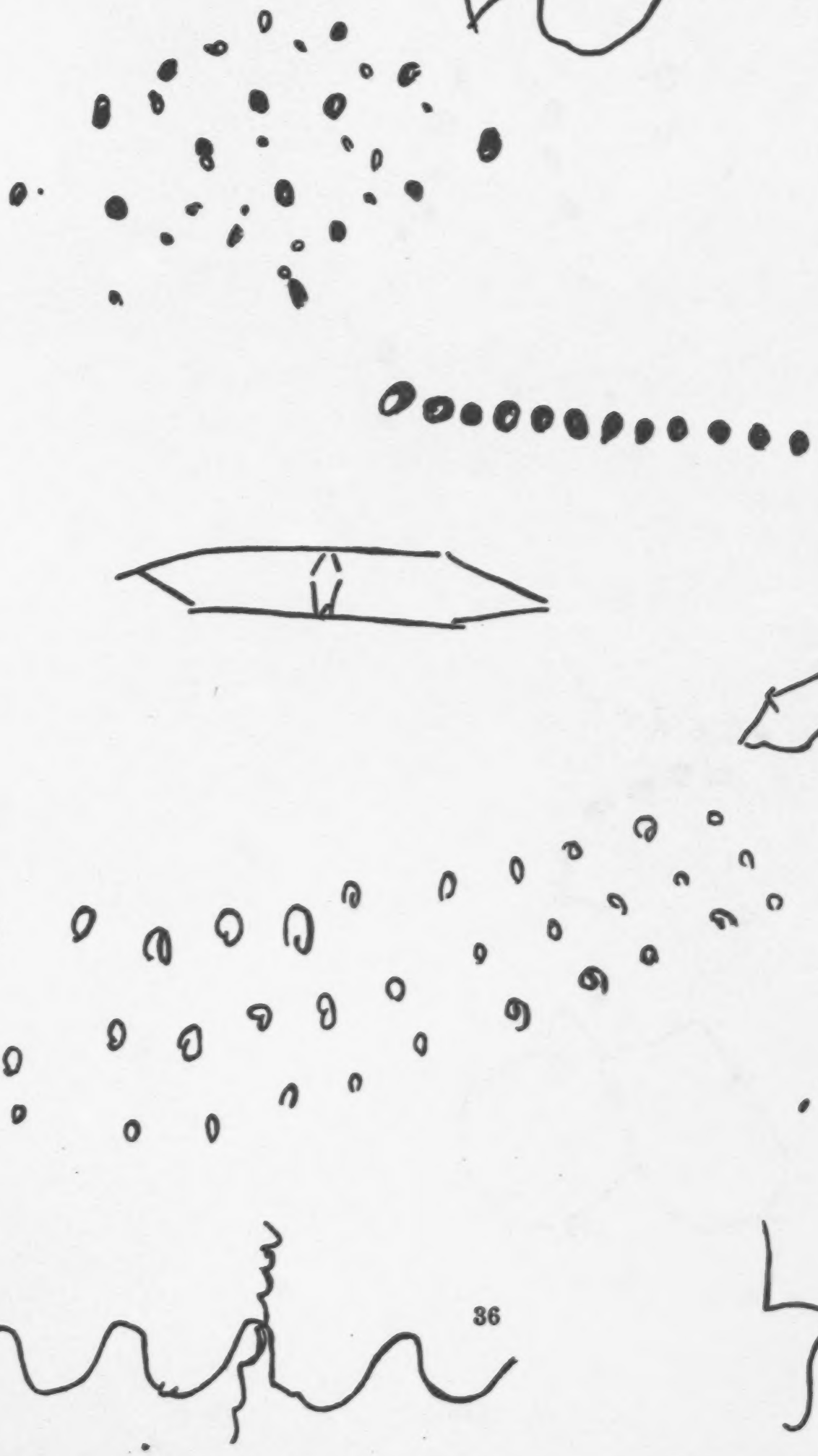


Sept. 1964

**Exhibit VII-A "Bub"**
**7-9 years old**

**Exhibit VII-B "Bub"**
**8-10 years old**

7-13-65



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